### This Page Is Inserted by IFW Operations and is not a part of the Official Record

### **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

#### IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents will not correct images, please do not report the images to the Image Problem Mailbox.

THIS PAGE BLANK (USPTO)

Title: Perfect score: Sequence:

US-09-821-883-2 690

MRAAPLLLARAASLSLGFLF

EPVQEGAPPPPAAAHHHHHH

Scoring table:

OLIGO

Gapop 60.0 , 112892 seqs,

41476328 residues Gapext 60.0 OM protein -

protein search, using sw model

Copyright

GenCore version (c) 1993 - 2003

5.1.4\_p5\_4578 Compugen Ltd.

April 28, 2003, 13:42:39; Search time 14 Seconds (without alignments) 2044.190 Million ceil

Run on:

Total number of hits satisfying chosen

parameters:

112892

Post-processing: Listing first 45

summaries

SwissProt\_40:\*

score

No. is the number of results predicted by chance to have greater than or equal to the score of the result being pusherived by analysis of the total score distribution.

D

SUMMARIES

Maximum

BB BB

seq

length: :0 length: 2000000000

Word size

0

Searched:

```
cell updates/sec
                                                                                                                                                                                 mycobacteri
mycobacteri
arthrobacte
mus musculu
mycobacteri
                                                                                                                                                                                                                                                                                     mus musculu
homo sapien
gallus gall
homo sapien
mus musculu
rattus norv
solanum tub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         homo sapien
ovis aries
mus musculu
cavia porce
canis famil
archaeoglob
archaeoglob
homo sapien
gallus gall
                                                                                 herpes simp drosophila sulfolobus
                                                                                                                                                                                                                                                                                                                                                                                                                                                   cervus elap
sus scrofa
                                                                                                                                            mycoplasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mesocricetu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        homo sapien
                                                                                                                                                               klebsiella
                                                                                                                                                                                                                                                                                                                                                                                                                                    bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           printed
RESULT 1
ERRB2_HUMP
ID ERRB2_HUMP
ID 2046
AC P046
AC P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35
35
35
35
35
35
35
35
44
44
45
45
45
45
                                                                                                                                                                                                                                                                                                                     "A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epidermal growth factor-receptor gene and is amplified human salivary gland adenocarcinoma.";

Proc. Natl. Acad. Sci. U.S.A. 82:6497-6501/1005.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Science [3]
                                                                          Coussens L., Yang-Feng T.L., Liao Y.C., Chen E., G
McGrath J., Seeburg P.H., Libermann T.A., Schlessi
Francke U., Levinson A., Ullrich A.;
"Tyrosine kinase receptor with extensive homology
shares chromosomal location with neu oncogene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-86118663; PubMed-3003577;
MEDLINE-86118663; PubMed-3003577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ERB2_HUMAN STANDARD; PRT; 1255 AA.

P04626;
13-AUG-1987 (Rel. 05, Created)
13-AUG-1987 (Rel. 05, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
16-GEORGE (Rel. 41, Last annotation update)
18-CEPBB2 (NEU proto-oncogene) (C-erbB-2) (Tyrosine surface receptor HER2) (MLN 19).

ERBB2 OR HER2 OR NGL OR NGU.
                                        tyrosine phosphate.
-I- SUBUNIT: HETERODIMER WITH EACH OF THE OTHER ERBB RECEPTORS
                                                                                                                                                                                                                         MEDLINE=93194196; PubMed=8095488;
Ehsani A., Low J., Wallace R.B., Wu A.M.;
"Characterization of a new allele of the
                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 737-1031 FROM N.A. MEDLINE-86016729; PubMed-2995967; Semba K., Kamata N., Toyoshima K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. MEDLINE-86070181; PubMed-2999974;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yamamoto T., Ikawa S., Akiyama T., Semba K., Nomura N., Miyaj. Saito T., Toyoshima K.; Saito T., Toyoshima K.; "Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growth factor receptor."; Nature 319:230-234(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                         VARIANTS VAL-654 AND VAL-655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               230:1132-1139(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: Type I membrane protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CALL_ONCKE
CSF2_COUSE
CSF2_FELCA
NUC2_RHIME
RL5_THEXE
RK12_NICSY
RK12_TOBAC
UREE_ALCEU
GIDB_COXBU
HAN1_SHEEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Eurelecstomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALIGNMENTS
                                                                                                                                                                                                                             the human ERBB2 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chen E., Gray A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nomura N., Miyajima
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γ A.,
τ J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EGF receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P38517
P36688
174929
C20338
C67522
P94614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P01587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.7.1.112)
kinase-type
                                                                                                                                                                                                                           by allele-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6 rhizobium m
7 thermotoga
8 nicotiana s
9 nicotiana t
8 alcaligenes
2 aquifex aeo
4 coxiella bu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mus musculu
felis silve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        oncorhynchu
gallus gall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ovis
                                                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cell
```

Result No.

Score

Match Query

Length DB

ERB2\_MESAU ERB2\_HUMAN

MODD\_MYCTU MODD\_MYCTU MOAA\_ARTNI FXB2\_MOUSE YV30\_MYCTU

CLPB\_MYCPN
ICPO\_HSV2H
CCAA\_DROME
SECE\_SULSO
RL29\_ARCFU
Y164\_ARCFU

P28284 P91645 P58191 028361 028415

CITA\_KLEPN

030620 Q50906 Q44118 Q44733 Q64733 O07035 P52687 P75247

EGFR\_MOUSE EGFR\_HUMAN EGFR\_CHICK ZIC2\_HUMAN CSF2\_BOVIN

ZIC2\_MOUSE

CSF2\_CANFA CSF2\_CAVPO ERB2\_MOUSE PPAP\_HUMAN

P48749 P51748 Q60481

P15309

P06494

P04626 Description

CSF2\_RAT UCRI\_SOLTU

```
DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                      TRANSMEM
DOMAIN
DOMAIN
NP_BIND
NP_BIND
NSULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                           DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE;
PROSITE;
PROSITE;
                                                                                                                                                                                                                                                                                                               CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or send
                                                                                                                                                                                                                                                                                                                                                                                                                                           ProDom; PD000001; Euk_pkinase;
SMART; SM00261; FU; 3
SMART; SM00219; TyrKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00069; pkinase; I.
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain;
Pfam; PF02757; YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-like.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR004019; YLP_motif.
                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                          Polymorphism.
                                                                                                                                                                                                                                                                                                                                                                                       Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genew; HGNC:
MIM; 164870;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mod1f1ed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it by non-profit institutions as long as its content is in no we ified and this statement is not removed. Usage by and for commercialities requires a license agreement (See http://www.isb-sib.ch/announce send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                M11767;
M11762;
M11763;
M11764;
M11766;
M11766;
M11766;
M11730;
M12036;
M20336;
M20336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POLYMORPHISM: THERE ARE FOURS ALLELES DUE TO THE VARIATIONS IN POSITIONS 654 AND 655. ALLELE B1 (654-ILE-655) HAS A FREQUENCY OF 0.782; ALLELE B2 (654-ILE-VAL-655) HAS A FREQUENCY OF 0.206; ALLELE B3 (654-VAL-VAL-655) HAS A FREQUENCY OF 0.012. SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PTM: LIGAND-BINDING INCREASES RESIDUES (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HGNC: 3430;
                                                                                                                                                                                                                                                                                                                                                            PS00107; PROTEIN_KINASE_ATP; 1.
PS00109; PROTEIN_KINASE_TYR; 1.
PS50011; PROTEIN_KINASE_DOM; 1.
PS50011; PROTEIN_KINASE_DOM; 1.
abrane; Glycoprotein; Multigene family; Receptor; Signal;
abrase; Tyrosine-protein kinase; ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A25491.
A24571.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1FGK
      ERBB2.
CYTOPLASMIC (POTENTIAL).

PROTEIN KINASE.

ATP (BY SIMILARITY).

ATP (BY SIMILARITY).

BY SIMILARITY

BY SIMILARITY
                                                                                                                                                                                                                                                                                                EXTRACELLULAR POTENTIAL.
                                                                                                                                                                                                                                                                                                                            RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PHOSPHORYLATION ON
                                                                                                                                                                                                                                                                                                            PROTEIN-TYROSINE KINASE ERBB-2
LULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      collaboration
RESULT 2
CSF2_HUMAN
ID CSF2_H
AC P04141
DT 01-NOV
DT 01-NOV
DT 15-JUN
DE Granul
DE (Colon
GN CSF2 O
OS Homo s
OC Eukary
OC Mammal
OX NCBI_T
RN [1]
RP SEQUEN
RA Lee F.
RA Arai K
RT "Isola
RT colons
RT Cells.
RL Proc.
RL Proc.
RM SEQUEN
RX MEDLIN
RX MEDLIN
RX MEDLIN
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                    colony-stimulating cells.";
                                                                                                                                                                                                                                                                            CSF2_HUMAN
P04141;
01-NOV-1986
01-NOV-1986
15-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                   SEQUENCE FROM N.A.
MEDLINE-85242684; PubMed-3925454;
Lee F. Yokota T., Otsuka T., Gem
Arai K.-I., Rennick D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                     CSF2 OR GMCSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                      Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                                                                           278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              139
                                                                                                                                                                                                                                                                                                                                                                                                               259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match 42.3%;
Local Similarity 100.0%;
les 292; Conservative
                                             Natl. Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             124
124
187
187
259
530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        563
587
600
626
                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₹
   PubMed=3486413
                                             Sci.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              576
584
596
623
634
642
1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137909
                                             U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED
N-LINKED
N-LINKED
I -> V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-LINKED
N-LINKED
                                                                                                                   Gemmell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                                                                                                                       144
                                                                                                                  ۲.
ز
```

```
01-NOV-1986 (Rel. 03, Created)
01-NOV-1986 (Rel. 03, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Granulocyte-macrophage colony-stimulating factor
(Colony-stimulating factor) (CSF) (Sargramostim)
                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                  NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                        CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                          for a human granulocyte-macrophage factor by functional expression in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 292; DB
Pred. No. 7.7
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
PHOSPHORVLATION
PHOSPHORVLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /FTId-VAR_004078.
P -> A (IN REF. 2).
WW; 39E9DFDA04DCF962 CRC64;
82:4360-4364(1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /FTId=VAR_004077.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             292; DB 1; L
. NO. 7.7e-274;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GLCNAC.

(GLCNAC.

(GLCNAC.

(GLCNAC.

(GLCNAC.

(GLCNAC.

(GLCNAC.

(GLCNAC.
                                                                                                                                                                                                                                                                                 ያ
                                                                     Larson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                             precursor (GM-CSF)
(Molgramostin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL)
(POTENTIAL)
                                                                    Luh J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BY
(BY
                            mammalian
                                            ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY).
SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                     310
                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                                                                                                                                                                                                                                                                     277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97
```

```
MEDLINE-92144609; PubMed-1737041;
Kaushansky K., Lopez J.A., Brown C.B.;
"Role of carbohydrate modification in the production and shuman granulocyte macrophage colony-stimulating factor in engineered and normal mesenchymal cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wong G.G., Witek J.S., Temple P.A.,
Luxenberg D.P., Jones S.S., Brown E
Shoemaker C., Golde D.W., Kaufman R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cantrell M.A., Anderson D., Cerretti D.P., Price V., McKereghan K., Tushinski R.J., Mochizuki D.Y., Larsen A., Grabstein K., Cosman D.; "Cloning, sequence, and expression of a human granulocyte/macrophage colony-stimulating factor"; Proc. Natl. Acad. Sci. U.S.A. 82:6250-6254(1985).
                                                                                                                                                                          macrophage colony-stimulating factor.";
J. Wol. Biol. 224:1075-1085(1992).
-I- FUNCTION: CYTOKINE THAT STIMULATES THE GROWTH AND DIFFERENTIATION
OF HEMATOPOIETIC PRECURSOR CELLS FROM VARIOUS LINEAGES, INCLUDING
GRANULOCYTES, MACROPHAGES, EOSINOPHILS AND ERYTHROCYTES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     **Novel fold and putative receptor binding granulocyte-macrophage colony-stimulating science 254:1779-1782(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kimmerly W., Bondoc M., Cheng J., Connolly K.s. Davis C.A., Kadner K., Miguel T., Pitluck S., Subramanian S., Martin C.H.; Subramanian S., Martin C.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 stimulating factor: comparison of EMBO J. 4:2561-2568(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Human GM-CSF: molecular cloning of the complementary DNA and purification of the natural and recombinant proteins."; Science 228:810-815(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. MEDLINE-85218749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE-85298329; PubMed-3898082;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Genomic cloning, characterization, and multilineage growth-promoting activity of human granulocyte-macrophage colony-stimulating factor."; Proc. Natl. Acad. Sci. U.S.A. 83:3101-3105(1986).
                                                                                                                                                                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
MEDLINE=92235844; PubMed=1569568;
Walter M.R., Cook W.J., Ealick S.E., N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS).
MEDLINE-92108420; PubMed-1837174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A., AND VARIANTS ILE-115 AN Rieder M.J., Carrington D.P., Chung M.-W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Miyatake S., Otsuka T., Yokota T., "Structure of the chromosomal gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biochemistry 31:1881-1886(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N1ckerson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE-86030234; PubMed-3876930;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Clark S.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Adamson J.W.;
                                                                                                                                                                                                                                                                                                                                               Bugg C.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYDRATE-LINKAGE SITES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kaushansky K.,
                                                                                                                                                                                                                                                                                                                 Three-dimensional structure of recombinant
                                                                                                                                                    GRANULOCYTES, MAC
SUBUNIT: MONOMER
Leucomax (Novartis). Used in myeloid reconstitution followir marrow transplant, bone marrow transplant engraftmant followir
                                                                          ASTHMA.
PHARMACEUTICAL:
                                                                                                                        POLYMORPHISM: VARIANT ILE-117 MAY BE A RISK FACTOR FOR ATOPIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (JUN-2001) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          O'Hara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=3923623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Berkner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ., Wilkens K.M., Leary E.L., Kay R.M., Orr E. R.J., Hewick R.M., War
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Connolly K.S., Gunning K.M Pitluck S., Pollard M., Ro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the mouse
                     yeloid reconstitution following transplant engraftment failure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lee F., Arai K.-I.;
for granulocyte-macrophage colony
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ×.
                                                                                                                                                                                                                                                                                                                                                                        Nagabhushan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Segal G.M., Hagen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AND THR-117.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      site of factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lee
                                                                                                                                                                                                                                                                                                              human granulocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and human genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Κ.L.,
                                                                                                                                                                                                                                                                                                                                                                        H
                                                                                                                                                                                                                                                                                                                                                                     .L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Poel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wang
                                                                                                                                                                                                                                                                                                                                                                     Trotta P.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               secretion of 
n genetically
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ဂ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rojeski H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Υį
                   bone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ö
                                                                                                                                                                                                                                                               SOLUTION CONTRACTOR CO
                                                 Дb
                                                                                                Ş
                                                                                                                                                    Query Match
Best Local S
Matches 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This
                                                                                                     549
                                                 18
                                              APARSPSPSTQPWEHVNAIQEARRILNLSRDTAAEMNETVEVISEMEDLQEPTCLQTRLE 608
```

```
InterPro; IPRUUV///
InterPro; IPRUUV///
Pfam; PF01109; GM_CSF; 1.
PRINTS; PR00693; GMCSFACTOR.
PRODOm; PD007349; GMCSF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M13207; AAA99768.1; -.
EMBL; M11734; AAA52122.1; -.
EMBL; M11220; AAA52578.1; -.
EMBL; X03021; CAA26822.1; -.
EMBL; M10663; AAA52121.1; -.
EMBL; AC004511; AAC08707.1; -.
EMBL; AF373868; AAK51563.1; -.
                                                                                                                                                                                                                                                                                                                                                                  DISULFID
DISULFID
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                             HELIX
TURN
STRAND
HELIX
TURN
SEQUENCE
                                                                                                                                                           HELIX
STRAND
HELIX
TURN
                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                       HELIX
TURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                                                      VARIANT
                                                                                                                                                                                                                                                                                                                      VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00702; GM_CSF; 1.
Cytokine; Growth factor; Glycoprotein; Signal; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Polymorphism;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          delay, mobilization and following transplantation of autologous peripheral blood progenitor cells, and following induction chemotherapy in older adults with acute myelogenous 'eukemia. DATABASE: NAME-Leukine; NOTE-Clinical information on Leukine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WWW-"http://www.imunex.com/patient/pa02e1.html"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        138960;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1CSG; 31-JAN-94.
2GMF; 08-NOV-96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A01853; FQHUGM.
C24636; C24636.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A25169;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HGNC:2434; CSF2
h 18.4%; S
Similarity 100.0%;
27; Conservative 0;
                                                                                              25
30
45
50
56
72
72
1104
1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A25169.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pharmaceutical.
                                                               133
16295 MW;
                                                                                              27
44
45
54
60
81
82
103
104
119
                                                                                                                                                                                                                                                                                        117
Score 127; DE ;; Pred. No. 4.2 0; Mismatches
                                                                                                                                                                                                                                                                                                                      O-LINKED.
O-LINKED.
O-LINKED.
O-LINKED (PARTIAL).
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
T-> I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR.
                                                                                                                                                                                                                                                                                         /FTId=VAR_013089
I -> T.
                                                                                                                                                                                                                                                                       /FTId=VAR_001975
                                                                75D1E50506BCA7A8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              There
              4.2e-115;
                                 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ere are no restrictions as its content is in
                  Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                collaboration -
                                 3
```

127;

Indels

0;

Gaps

Ş

LYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPFD

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NABABMURA T., UShijima ...

Nakamura T., UShijima ...

Yamazaki Y., Ishikawa T.;

"Cloning and activation of the Syrian hamster Hear."

"Cloning and activation of the Syrian hamster Hear."

"Cloning and activation of the Syrian hamster Hear."

Gene 140:251-255(1994).

-1- FUNCTION: ESSENTIAL COMPONENT OF A NEUREGULIN-RECEPTOR COMPLEX,

ALTHOUGHT NEUREGULINS DO NOT INTERACT WITH IT ALONE. GP30 IS A

POTENTIAL LIGAND FOR THIS RECEPTOR. NOT ACTIVATED BY EGF, TGF-

ALPHA AND AMPHIREGULIN (BY SIMILARITY).

-1- CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein

CATALYTIC CATALYTIC ACTIVITY: ATP + a PROTEIN TYROSINE = ADP + PROTEIN
       Pfam; PF00069; Pkinase; 1.

Pfam; PF00757; Furin-like; 1.

Pfam; PF01030; Recep_L_domain; 2.

ProDom; PD000001; Euk_pkinase; 1.

SMART; SM00261; FU; 3.

SMART; SM00219; TyrKC; 1.

SMART; SM00219; TyrKC; 1.

SMART; SM00219; TyrKC; 1.

SMART; SM00219; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00107; PROTEIN_KINASE_DOW; 1.

TRANSFerase; TyrOsine-protein; Multigene family; Receptor; Signal; Transmembrane; Glycoprotein; Multigene family; Phosphorylation; Tyrosine-protein kinase; ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                               InterPro; IPR000494; EGFR_L_domai
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-1ike.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR004019; YLP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    i5-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-DUN-2002 (Rel. 41, Last annotation update)
Receptor protein-tyrosine kinase erbB-2 precursor (pl85erbB2) (NEU proto-oncogene) (C-erbB-2).
                                                                                                                                                                                                                                                                                                                          EMBL; D16295; BAA03801.1; HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ÷÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE-Nerve;
MEDLINE-94193007;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mesocricetus auratus (Golden hamster).
Eukaryota: Metazoa: Chordata: Craniata
Mammalia: Eutheria: Rodentia: Sciurogn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MESAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mesocricetus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ERB2_MESAU
Q60553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESIDUES.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUBCELLULAR LOCATION: Type I PTM: LIGAND-BINDING INCREASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CWEPVQE 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CWEPVQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OR NEU.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=7908275;
jima T., Ishizaka Y., Nagao M.,
                                                                                                                                                                                                                                                                  Euk_pkinase.
Furin-like.
                                                                                                                                                                                                                                                                                                    EGFR_L_domain.
mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      membrane protein.
S PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (E)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
; Cricetinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYROSINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.7.1.112)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                      vi-JAN-1988 (Rel. 06, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-UN-2002 (Rel. 41, Last annotation update)
Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)
(p185erbB2) (NEU proto-oncogene) (C-erbB-2) (Epidermal growth fau ERBB2 OR NEU.
Rattus normani-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chorv
Mammalla; Eutherla; Roden
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
NP_BIND
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
TRANSMEM
DOMAIN
  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                           310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            250
                                                                                                                                                                                                                                                                                                                                                                                                    291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                  FGASCVT
FGASCVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ch 9.7%;
| Similarity 100.0%;
| 67; Conservative |
  FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1247
68
125
187
259
530
571
629
658
658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           158
472
720
726
753
845
753
199
236
240
255
268
                                                                                                                                                                                                                                                                                                                                                                                                                                           316
N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             642
1139
1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1254
6522
1254
12575
12575
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
13688
136
                                                          Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          125
125
259
530
571
658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      138252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATP (BY SIMILA ATP) (BY SIMILARITY). BY SIMILARITY). BY SIMILARITY. BY SIMILARITY. BY SIMILARITY. BY SIMILARITY. BY SIMILARITY. BY SIMILARITY BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PHOSPHORYLATION (
PHOSPHORYLATION (
N-LINKED (GLCNAC,
N-LINKED, GLCNAC,
N-LINKED, GL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 67; DB Pred. No. 2.80; Mismatches
                                                        Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CYS-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CYS-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
RECEPTOR PROTEIN-TYROSINE
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  > E (IN ONCOGENIC
> E (IN ONCOGENIC
974C3791C21F2BE1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .8e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NEU).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KINASE ERBB-2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç,
                                                             Rattus
                                                                                                                                                                   factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

TISSUE-Neuroblastoma; MEDLINE-86118662; PubMed-3945311; Bargmann C.I., Hung M.-C., Weinberg "The neu oncogene encodes an epiderm

epidermal

growth factor receptor-related

R.A.;

```
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-like.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR00124019; YLP_motif.
Pfam; PF00069; pkinase; 1.
Pfam; PF000757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain; 2.
Pfam; PF01030; Recep_L_domain; 2.
Pfam; PF02757; YLP; 2.
Pfam; PF02757; YLP; 2.
SMART; SM00216; FU; 3.
SMART; SM00216; TyrKc; 1.
PROSITE; PS00107; PROTEIN_KINASE_ATPROSITE; PS00109; PROTEIN_KINASE_ATPROSITE; PS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Newman R., Crumpton M.J., Sternberg M.J.E., Campbell "Three dimensional structure of the transmembrane reg oncogenic and oncogenic forms of the neu protein.", EMBO J. 11:43-48(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "An extended family of protein-tyrosine kinase expressed in the vertebrate nervous system."; Neuron 6:691-704(1991).
    DOMAIN
TRANSMEM
DOMAIN
DOMAIN
DOMAIN
DOMAIN
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tyrosine phosphate.

SUBUNIT: HETERODIMER WITH EACH OF THE OTHER ERBB RECEPTORS.

THE CONSTITUTIVELY ACTIVATED ONCOGENIC VARIANT FORMS A HOMODIMER.

SUBCELLULAR LOCATION: Type I membrane protein.

FYM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE RESIDUES (BY SIMILARITY).

SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE-Sciatic ne
MEDLINE-91222560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nature
[2]
                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; X03362; CAA270:
PIR; A24562; TVRTNU.
HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-921551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRUCTURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF
                                                                                                                                                                                                                          Proto-oncogene;
                                                                                                                                                                                                                                                Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000494; EGFR_L_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FUNCTION: ESSENTIAL COMPONENT OF A NEUREGULIN-RECEPTOR COMPLEX, ALTHOUGHT NEUREGULINS DO NOT INTERACT WITH IT ALONE. GP30 IS A POTENTIAL LIGAND FOR THIS RECEPTOR. NOT ACTIVATED BY EGF, TGF-ALPHA AND AMPHIREGULIN.

CATALYIC ACTIVITY: ATP + a protein tyrosine - ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   319:226-230(1986).
                                                                                                                                                                                                                                                                                               PS50011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BY NMR OF 650-668,
2155181; PubMed=1346763;
.J., Bottomley A.C., Lof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    852-905 FROM N.A.
                                                                                                                                                                                                                                                Tyrosine-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAA27059.1; ALT_INIT
                                                                                                                                                                                                                                                                         Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nerve;
                                                                                                                                                                                                                          Disease
                                                                                                                                                                                                                                 PROTEIN_KINASE_ATP; 1.

PROTEIN_KINASE_TYR; 1.

PROTEIN_KINASE_DOM; 1.

PROTEIN_KINASE_DOM; 1.

Signorotein; Multigene family; Receptor; Signal;

Saine-protein kinase; ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PubMed=2025425
         1257
654
677
1257
1257
1257
1257
1257
                                                                                                                                                                                                                          mutation
RECEPTOR PROTEIN-TYROSINE KINASE ER
EXTRACELLULAR (POTENTIAL).
POTENTIAL.
CYTOPLASMIC (POTENTIAL).
CYS-RICH.
CYS-RICH.
CYS-RICH.
PROTEIN KINASE.
ATP (BY SIMILARITY).
                                                                                                                                                                                               POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .G., Mulvey D.,
cell I.D.;
region of the p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      differentially
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           proto-
```

reactive surface a phosphatase.";
J. Biol. Chem. 26

266:2313-2319(1991)

residues P.E.,

of.

human

prostatic

acid

and

Macarthur H., Mo

Moore D.L. on of

Ξ.

```
RESULT
PPAP_HU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOD_RES
MOD_RES
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACT_SITE
DACT_SITE
DACT_SITE
DISULFID
                                                                                                                                    SEQUENCE From SEQUENCE From No. 1. S. S. - L.;
Sharlef F.S., L1 S.S. - L.;
"Structure of human prostatic acid phosphatase gene.";
"Structure of human prostatic acid phosphatase gene.";
"1 n hvs. Res. Commun. 184:1468-1476(1992).
                                                                                                                                                                                                                                                                                                                                           01-APR-1990
01-MAR-1992
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                        PPAP_HUMAN
P15309;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                         HUMAN
                                                                      wedline-91115848; Pul
van Etten R.L., Davi
"Covalent structure,
                                                                                                                                                                                                                                                   Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BINDING
                                                                                                                                                                                                                                                                                                                                Prostatic
                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LPTDCCHEQCAAGCTGPKHSDCLACLHENHSGICELHCPALVTYNTDTFESM 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52; Conservative
                                                                                                                                 FROM
                                                                                                                                                                                                                                                                                                                            390 (Rel.
392 (Rel.
301 (Rel.
3 acid pho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1250
68
188
260
532
573
631
                                                                                                                                N.A., PARTIAL SEQUENCE,
                                                                                                                                                                                                                                                                                                                           el. 14, Created)
el. 21, Last sequence update)
el. 40, Last annotation update)
phosphatase precursor (EC 3.1.3.2).
                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                        8; PubMed=1989985;
Davidson R., Stevis P.E
ture, disulfide bonding,
e and active site residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  138831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .08
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATP (BY SIMILARITY).
BY SIMILARITY.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 52; DB Pred. No. 9e-0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                         386
                                                                                                                                 DISULFIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9e.
                                                                                                                                                                                                                                                                                                                                                                                                         ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                 BONDS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ) (BY SIMILARITY).) (BY SIMILARITY).) (POTENTIAL).) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1257;
                                                                                                                                   AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
201
                                                                                                                                   ACTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps .
                                                                                                                                                                                                 ~:_
?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                         .
```

```
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                     between
the Euro
                                                                                                                           EMBL;
                                                                                                                                               EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                              EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Molecular cloning and sequence analysis of c
prostatic acid phosphatase.";
FEBS Lett. 236:275-281(1988).
                                                                                                                                                                                                                                              modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Prostate;
MEDLINE-88312981; Pu
Vihko P., Virkkunen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Human prostatic acid phosphatase: cDNA cloning, gene mapping protein sequence homology with lysosomal acid phosphatase."; blochem. Biophys. Res. Commun. 160:79-86(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-89228054; Pu
Sharief F.S., Lee H.
Lee C.-L., Li S.S.-L
                                                                                                                                                                                                                                                                                                                                                                                    Lacount M.W., Handy G., Lebioda L.;
"Structural origins of L(+)-tartrate
                                                                                                                                                                                                                                                                                                                                                                                                      X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).
MEDLINE-99023966; PubMed-9804805;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Sharief F.S., Li S.S.-L.;
"Nucleotide sequence of human prostatic acid including seven Alu repeats.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-95038536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tallor P.G., Govindan M.V., Patel P.C.;
"Nucleotide sequence of human prostatic from a full-length cDNA clone.";
Nucleic Acids Res. 18:4928-4928(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-90370491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., AND PARTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                   ncluding seven Alu repeats.";
lochem. Mol. Biol. Int. 33:561-565(1994).
                                                                                                                                                                                                                                                                                                                                                                   id phosphatase
Biol. Chem. 27
                                                                                                                                                                                                                                                                                                                        Biol. Chem. 273:30406-30409(1998).
CATALYTIC ACTIVITY: An orthophosphoric monoester + H(2 alcohol + phosphate.
SUBUNIT: HOMODIMER.
SIMILARITY: BELONGS TO THE HISTIDINE ACID PHOSPHATASE
                                                                                                                                                                                                                                                                          s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the Event European Bioinformatics Institute. There are no restroy by non-profit institutions as long as its content
       M24902;
X53174;
X53605;
U07097;
U07083;
U070865;
U07086;
U07098;
U07091;
U07092;
U07092;
U07093;
                                                                                                                         M97585;
M97586;
M97587;
M97588;
M34840;
                                                                                                                                                                           M97583;
M97584;
                                                                                                                                                                                             M97589;
M97580;
M97581;
M97582;
                                                                                                                                                                                                                                                                 non-profit institu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FROM N.A.
       AAA60021
AAA60021
AAA60022
CAA36422
CAA37673
AAB60640
AAB60640
AAB60640
AAB60640
AAB60640
AAB60640
AAB60640
AAB60640
                                                                                                                                                                                                                   AAA60021.1;
                                                                                                                                                                                                                           AAA60021.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=2395659;
ndan M.V., Patel P.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PubMed-2842184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=2712834;
H., Leuderman M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PubMed=7951074;
                        .
                                                                                                                                  JOINED.
       JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . X
. X
.
                                                                                                                                                                                                                                                                                                                                                                                     inhibition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lundwall A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cDNA encoding human
                                                                                                                                                                                                                                                                                                                                                                                                                                                       phosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          phosphatase determined
                                                                                                                                                                                                                                                                                                                                                                                     of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Deaven
                                                                                                                                                                                                                                                                                   restrictions
                                                                                                                                                                                                                                                                                                                                                        H(2)0
                                                                                                                                                                                                                                                                                              EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACPP
                                                                                                                                                                                                                                                                                                                                                                                     prostatic
                                                                                                                                                                                                                                                                            is
                                                                                                                                                                                                                                                                                                                            FAMILY
                                                                                                                                                                                                                                                                                                       a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                               outstation
                                                                                                                                                                                                                                                                          in
                                                                                                                                                                                                                                                                            ö
```

```
RESULT 6
CSF2_SHEEP
 밁
                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                             01-DEC-1992 (Rel. 24, Creater, 01-DEC-1992 (Rel. 24, Last seg 01-OCT-1996 (Rel. 34, Last and Granulocyte-macrophage colony Granulocyte-macrophage factor) (
                                                                                         Ovis aries (Sheep).
Eukaryota; Metazoa; (
Mammalia; Eutheria; C
Bovidae; Caprinae; Ov
NCBI_TaxID=9940;
                                                                                                                                                                                              CSF2_SHEEP
P28773;
                       granulocyte-macrophage colony-stimulating 1 Gene 105:275-279(1991).
                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
DISULFID
DISULFID
DISULFID
ACT_SITE
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACT_SITE
                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000560; HisAc_phsphtse.
pfam; pF00328; acid_phosphat; 1.
pROSITE; pS00616; HIS_ACID_PHOSPHAT_1; 1.
pROSITE; pS00778; HIS_ACID_PHOSPHAT_2; 1.
Hydrolase; Glycoprotein; Signal; 3D-structure.
                                             SEQUENCE FROM N.A.
MEDLLNE-92039044; PubMed-1937025;
MCIDNES C.J., Haig M.C.K.;
"Cloning and expression of a cDNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIGNAL
FUNCTION: CYTOKINE THAT STIMULATES THE GROWTH AND DIFFERENTIATION OF HEMATOPOIETIC PRECURSOR CELLS FROM VARIOUS LINEAGES, INCLUDING GRANULOCYTES, MACROPHAGES, EOSINOPHILS AND ERYTHROCYTES (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; S01331; S01331.
; S11147; S11147.
; JH0610; JH0610.
; 2HPA; 16-SEP-98.
                                                                                                                                                                                                                                                      MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKEL
                                                                                                                                                                                                                                                                        MRAAPLILARAASLSLGFLFLLFFWLDRSVLAKEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HGNC:125; ACPP.
                                                                                                                                                                                                                                                                                           35,
                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                             116
139
157
212
215
215
294
372
383
386
                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                              A
A
                                                                                                                                                                                                        STANDARD;
                                                                                                                                               24, Last sequence update)
34, Last annotation update)
phage colony-stimulating fac
ng factor) (CSF)
                                                                                                     Ovis.
                                                                                                                                                                                                                                                                                                                                       Chordata; Craniata; Vertebrata;
Cetartiodactyla; Ruminantia; Pec
                                                                                                                                                                                                                                                                                                                              44566 MW;
                                                                                                                                                                                                                                                                                                  5.1%;
                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
SLGFLFLLFF -> ALASCECTAR
                                                                                                                                                                                                                                                                                                                                     SLGFLÉLLEF -> A

D -> H (IN REF
GFGQLTQL -> WIW
GFGQLTQL -> RIW
GFGQLTQL -> RIW
E -> D (IN REF
A -> R (IN REF
P -> R (IN REF
P -> A (IN REF
C -> V (IN REF
                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                         Score 35; DB
Pred. No. 8.9
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSTATIC
                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                              EF81E11DFAECADEA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                (IN REF. 3)
(IN REF. 3)
(IN REF. 5)
(IN REF. 5)
(IN REF. 4)
                                                                                                                                                                                                        144
                                                                                                                                                                                                                                                                                                                                                                                                                       -> WIWPTHPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACID PHOSPHATASE
                                                                                                                                                                                                                                                                                                                                                                                                                                          REF.
                                                                                                                                                                                                                                                       35
                                                                                                                                                                                                                                                                       35
                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                  в 1;
.9е-
                                    g ovine factor.
                                                                                                                                                           factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AFASCFCFFC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALASCFCFFC
                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                           Length 386
                                                                                                             Pecora; Bovoides
                                                                                                                                                           precursor
                                                                                                                                                                                                                                                                                                                                                                                                                        (IN
                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BY
                                                                                                                                                                                                                                                                                                                                                                                                                        REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ĺ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                   REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REF
                                                                                                                                                           (GM-CSF)
                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>5</u>
                                                                                                                                                                                                                                                                                           Gaps
```

```
STITTTTTWEETHORRS
          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 22
                                                                                                                                                                                                                                                                                                                                                         ERB2_MOUSE STANDARD,
P70424; Q61525;
15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-DEC-1998 (Rel. 41, Last annotation update)
Receptor protein-tyrosine kinase erbB-2 (EC 2
Sanes J.R.;

Sanes J.R.;

Synapse-associated expression of an acetylcholine receptor.

"Synapse-associated expression of an acetylcholine receptor."

protein, ARIA/heregulin, and its putative receptors, ErbB2 & in developing mammalian muscle.";

in developing mammalian muscle.";

Dev. Biol. 172:158-169(1995).

-I- FUNCTION: ESSENTIAL COMPONENT OF A NEUREGULIN-RECEPTOR ALTHOUGHT NEUREGULINS DO NOT INTERACT WITH IT ALONE. GP ALTHOUGHT NEUREGULINS DO NOT RECEPTOR. NOT ACTIVATED BY EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                         Lim J., Dey S.K., Das S.K.;
"Differential expression of the erbB2 gene in mouse uterus: potential mediator of signaling factor-like growth factors.";
Endocrinology 138:1328-1337(1997).
                                                                                                                                                                                                                                                                                                                      Mus musculus (Mouse).
Eukaryota; Metazoa; C
Mammalia; Eutheria; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000773; GM_CSF.
pfam; pF01109; GM_CSF; 1.
pRINTS; PR00693; GMCSFACTOR.
proDom; PD007349; GM_CSF; 1.
SMART; SM00040; CSF2; 1.
                                                                                                                    SEQUENCE OF 150-245 FROM N.A. MEDLINE-96069911; PubMed-7589796; MOSCOSO L.M., Chu G.C., Gautam M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cytokine; Growth factor; Glycoprotein; Signal SIGNAL 1 17 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; X53561; CAA37632.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; JH0469; JH0469.
HSSP; P04141; 2GMF.
                                                                                                                                                                                                                                                                               SEQUENCE OF 1-149 FROM N.A.
                                                                                                                                                                                                                                                                                                          NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00702;
                                                                                                                                                                                                                                                  MEDLINE-97200814; PubMed-9048643;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY).
SUBUNIT: MONOMER (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                  ; TISSUE-Uterus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GM_CSF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               113
138
                                                                                                                                                                                                                                                                                                                       Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ME:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 22;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GRANULOCYTE-MACROPHAGE FACTOR.
                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABAAC8733B580008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                        Noakes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1; I
1.4e-13;
                                                                                                                     P.G.,
                                                                                                                                                                                                                                                                                                                                                                                        2.7,1.112) (p185erbB2)
                                                                                                                                                                                                    the by e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                       Merlie
                                                                                                                                                                                                         epidermal
                                                                                                                                                                                                         periimplantation
epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                            receptor-inducing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COLONY-STIMULATING
                                                                                                                       J.P.,
          EGF,
        R COMPLEX,
SP30 IS A
EGF, TGF-
                                                                             and ErbB3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
RESULT 8
CSF2_CAVPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NON_CONS
NON_TER
SEQUENCE
                                                                                                                                                                                               CSF2_CAVPO
Q60481;
                                                                 01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
Granulocyte-macrophage colony-stimulating factor
(Colony-stimulating factor) (CSF) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -!- SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tyrosine phosphate.
-!- SUBUNIT: HETERODIMER WITH EACH OF THE OTHER ERBB RECEPTORS
Cavia porcellus (Guinea pig).
Eukaryota; Metazoa; Chordata;
                                                    CSF2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00221; STYKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000719; Euk_pkinase
InterPro; IPR004040; STY_pkinase
InterPro; IPR001245; Tyr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U71126; AAB17380.1;
EMBL; L47239; AAA93532.1;
HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the European Bioinformatics Institute. The second of the s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transmembrane; Glycoprotein; Tyrosine-protein kinase; ATP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS00107; PROTEIN_KINASE_ATP; PARTIAL.
PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
Transmembrane; Glycoprotein; Multigene family; Receptor; Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PRO0109; TYRKINASE.
                                                                                                                                                                                                                                                                                                                                                 210
                                                                                                                                                                                                                                                                                                                                                                          363 PRSPLAPSEGAGSDVFDGDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEVELOPMENTAL STAGE: ON DAYS 1-4 OF PREGNANCY, ERBB2 IS DETERMINATIVE IN PETTHELIAL CELLS, THE DAY 1 UTERUS SHOWING THE HIGHEST ACCUMULATION, ON DAY 5, THE EPITHELIUM AND THE DECIDUALIZING STROMAL CELLS AROUND THE IMPLANTING BLASTOCYST EXHLEST ACCUMULATION OF THIS RECEPTOR. ON DAYS 6-8, THE EXPERENCES IN THE EPITHELIUM AT BOTH THE IMPLANTATION AND INTERIMPLANTATION SITES IN ADDITION TO MODEST LEVELS IN THE EXPENSIONS IN THE TROPHOBLASTIC GIANT AROUNDLATION IS ALL PROMINENT IN THE TROPHOBLASTIC GIANT CELLS.

PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE RESIDUES (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALPHA AND AMPHIREGULIN.
CATALYTIC ACTIVITY: ATP +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CELLS. IN THE MUSCLE, EXPRESSION LOCALIZES OF MUSCLE FIBERS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGI:95410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through the Swiss Institute of Bioinformatics and the En
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  149
245
                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Erbb2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  >149
61
150
245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N: Type I membrane protein.
EXPRESSED PREDOMINANTLY IN UTERINE EPITHELIAL
EXPRESSED FREDOMINANTLY TO THE SYNAPTIC SITES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATP-binding; Phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 20;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN KINASE
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a protein tyrosine -
  Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0F763F0363DFEF1C CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
1.9e-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 There are no rest
                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 245
                                                                                               precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  by and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLASTOCYST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THE EXPRESSION .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ø
                                                                                                  (GM-CSF)
                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DETECTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALSO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 8
                                                                                                                                                                                                                                                                                                                                                                     _____
                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
CCC
                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                     Matches
                                                                                                                                            01-FEB-1996
01-FEB-1996
01-OCT-1996
                      MEDLINE-91329842; PubMed-1868252; Mash R.A., Schuening F., Appelbaum F., Han Morris C.F., Slichter S.J., Storb R.; "Molecular cloning and in vivo evaluation macrophage colony-stimulating factor.";
                                                                                                                          01-FEB-1996 (Rel. 33, Creat, 01-FEB-1996 (Rel. 34, Last, 01-CT-1996 (Rel. 34, Last, Granulocyte-macrophage colon (Colony-stimulating factor)
                                                                                                                                                                                                                                                                                     DISULFID
DISULFID
CARBOHYD
CARBOHYD
CARBOHYD
NON_TER
SEQUENCE
                                                                                                                                                                                     CANFA
                   Blood
                                                                                           Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                             Canis familiaris
                                                                                                                      CSF2
                                                                                                                                                                     CSF2_CANFA
P48749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-Hartley; TISSUE Yuan H.T., Kelly F.J., Submitted (FEB-1996) to
                                                                  SEQUENCE FROM N.A.
                                                                                   NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                       Cytokine;
                                                                                                                                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                      SMART; SM00040; CSF2;
                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000773; GM_CSF.
Pram; pr01109; GM_CSF; 1.
ProDom; PD007349; GM_CSF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; U46779; AAA87592.1; -. HSSP; P04141; 2GMF.
                                                                                                                                                                                                                                                                                                                                                                                                                                               entities requires a license agreement (some send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                              use by non-profit institutions as long amodified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mammalia; Eutheria;
NCBI_TaxID=10141;
                                                                                                                                                                                                                                     632
                                                                                                                                                                                                                       102
                                                                                                                                                                                               9
od 78:930-937(1991)
FUNCTION: CYTOKINE THAT STI
OF HEMATOPOIETIC PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                European
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBUNIT: MONOMER (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ALLIEG (FEB-1996) to the EMBL/Genbank/DDBJ databases.
FUNCTION: CYTOKINE THAT STIMULATES THE GROWTH AND DIFFERENTIATION
OF HEMATOPOLETIC PRECURSOR CELLS FROM VARIOUS LINEAGES, INCLUDING
GRANULOCYTES, MACROPHAGES, EOSINOPHILS AND ERYTHROCYTES (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY)
                                                                                                                                                                                                                      YKOHCPPTPETSC
                                                                                                                                                                                                                                     YKQHCPPTPETSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is
                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                             PS00702; GM_CSF; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                      Growth factor;
                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                               140
                                                                                                                                                                                                                                                                                                      72
106
45
55
                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ROT entry is copyright. It is produced through Swiss Institute of Bioinformatics and the EN Bloinformatics Institute. There are no resti
                                                                                                                                                                                                                                                                                     A,
                                                                                                                                                                             STANDARD;
                                                                                          s (Dog).
zoa; Chordata; C
ria; Carnivora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Lung;
                                                                                                                                                                                                                                                                                                                                                       >140
                                                                                                                                                                                                                      114
                                                                                                                                                                                                                                                                                                      114
139
45
55
87
                                                                                                                                                                                                                                     644
                                                                                                                                                                                                                                                                                       15869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rodentia;
                                                                                                                                                                                                                                                            1.9%;
                                                                                                                                 Last sequence update)
Last annotation update
e colony-stimulating f
                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bingle
                                                                                                                                                                                                                                                                                                                                                    Glycoprotein; Signal.
POTENTIAL.
GRANULOCYTE-MACROPHAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY)
                                                                                                                                                                                                                                                                                     MW;
STIMULATES THI
                                                                                                                                                                                                                                                             Score 13;
; Pred. No.
                                                                                                                                                                                                                                                      0
                                                                                                                            (CSF)
                                                                                                                                                                                                                                                                                                    BY SIMILA
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C.D.;
                                                                                           Craniata; Ve
; Fissipedia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hystricognathi; Caviidae; Cavia.
                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                     FF72E7A9491C831C
                                                                                                                                                                                                                                                                                                                              SIMILARITY.
                                                                                                                                                                                                                                                              No.
                                                                                                                                                                             144
                                                                                                                                                                                                                                                                                                    (GLCNAC.
                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      (See
         THE
                                                 Hammond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     There are no rest
                                                                                                                                                                                                                                                            DB 1;
7e-05;
                                                                                                   Vertebrata;
                                                                                                                                                                             ₿
E GROWTH
                                 of
                                                                                                                                    factor
                                                                                            Canidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Usage
                                 canine
                                                                                                                                                                                                                                                     0;
                                                  W.P.,
                                                                                                                                                                                                                                                                    Length 140
                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                   precursor (GM-CSF)
AND DIFFERENTIATION LINEAGES, INCLUDING
                                                                                                                                                                                                                                                                                                    ) (POTENTIAL)
) (POTENTIAL)
                                granulocyte.
                                                                                            Canis
                                                                                                                                                                                                                                                                                                                                                      COLONY-STIMULATING
                                                                                                   Euteleostomi;
                                                  Boone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'n
                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1ts
                                                                                                                                                                                                                                                    0
DRRCCCCCCCCCCCCCRRRRNX
                                                                                                                                                                                                                                                                             RESULT
CSF2_CI
                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                            δÃ
```

```
Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                   01-OCT-1996
01-OCT-1996
01-OCT-1996
                                entities
or send a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
CARBOHYD
SEQUENCE
                                                                                                         This
                                                                                                                                                                                                                                                                                                                       01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation updat
Granulocyte-macrophage colony-stimulating f
                                                                                                                                                                                                                                                                                                                                                                       CSF2_CE
P51748;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cytokine;
SIGNAL
                                                                                the European
                                                                                                                                                                   Submitted (SEP-1994) to the EMI-i- FUNCTION: CYTOKINE THAT STORED OF HEMATOPOIETIC PRECURSOR
                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
Cervidae; Cervinae;
                                                                                                                                                                                                                                                                                                                                                                                                CEREL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This
                                                         modified
                                                                       use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                              between
                                                                                                                                                                                                      SEQUENCE FROM Lockhart E.A.;
                                                                                                                                                                                                                                         NCBI_TaxID=9860;
                                                                                                                                                                                                                                                                                        Cervus elaphus (Red
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000773; GM_CSF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HSSP; P04141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; S49738; AAB19466.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       between
                                                                                                                                                                                                                                                                                                             (Colony-stimulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                           631 HYKQHCPPTPE
                                                                                                                                                                                                                                                                                                                                                                                                                                             100
                                                                                                                                  SUBUNIT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY SUBUNIT: MO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          European
                                                                                                                                              SIMILARITY)
                                                                                                                                                       GRANULOCYTES, MACROPHAGES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GRANULOCYTES,
                                                                                                        SWISS-PROT entry
                                                                                                                                                                                                                                                                                                                                                                                                                                             HYKQHCPPTPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SWISS-PROT entry is copyright. It is produced the Swiss Institute of Bioinformatics
U14392;
P04141;
                                                                                                                                                                                                                                                                                                                                                                                    CEREL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF01109; GM_CSF; 1.
S; PR00693; GMCSFACTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; PD007349; GM_CSF; 1.
SM00040; CSF2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
11; Conser
                                  an
                                                         and
                                             requires a
                                                                      non-profit
                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PS00702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and this statement is not removed requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               non-profit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Growth factor;
                                 equires a license agreement ( email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                  (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              equires a license agreement (S email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144
                                                                                                                                                                                                                                                                                                                                                           (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                          this statement
                                                                                Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bioinformatics Institute. The profit institutions as long
                                                                                              Swiss
                                                                                                                                  MONOMER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MONOMER
                                                                                                                                                                                                                 N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18
AAA21439.1;
2GMF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   641
                                                                                                                                                                                                                                                                                                                                                                                                                                             110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GM_CSF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MACROPHAGES,
                                                                                             Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138
                                                                                                                                                                                                                                                    Chordata; Crania Cetartiodactyla; Cervus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       44
16137
                                                                                                                                                                                                                                                                                        deer)
                                                                                                                                                                                                                                                                                                             factor) (CSF).
                                                                      institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (BY
                                                                                                                                (BY SIMILARITY).
                                                                                             is copyright.
stitute of Bio
                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Glycoprotein;
BY SIMILA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ¥.
                                                                                                                                                               EMBL/GenBank/DDBJ databases.
STIMULATES THE GROWTH AND DIFFERENTIATION
SOR CELLS FROM VARIOUS LINEAGES, INCLUDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC. .
6323807E1F1C6343 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                          is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 11;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GRANULOCYTE-MACROPHAGE FACTOR.
                                                                                                                                                                                                                                                           Craniata; Vertebrat
actyla; Ruminantia;
                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                        EOSINOPHILS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EOSINOPHILS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rotein; Signal.
SIMILARITY.
                                                                                             ght. It is produced through a Bioinformatics and the EMBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                    144
                                             (See
                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is produced through
                                                                                                                                                                                                                                                                Vertebrata; Eute
minantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        There are
                                                                                 There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J.0061;
0;
                                                                                                                                                                                                                                                                                                                         factor
                                                                     as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               as its content
                                             http://www
                                                                                                                                                        AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       http://www.isb-sib
                                                       Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Usage
                                                                      its content
                                                                                                                                                       ERYTHROCYTES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ERYTHROCYTES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                    precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                          by.
                                                                                                                                                                                                                                                                          Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COLONY-STIMULATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                               EMBL
                                                                                                                                                                                                                                                                Cervoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a collaboration -
                                                                                                                                                                                                                                                                                                                       (GM-CSF)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BY
                                                          for
                                                                                                                                                       (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                              collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .ch/announce,
                                                          in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     commercia.
                                                                                                                                                                                                                                                                                                                                                                   ...
...
                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                             .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                  ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                        029118; 029046;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence up
01-NOV-1997 (Rel. 35, Last annotation
                   EMBL;
                                               This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-sor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                            Gloster S. Submitted
                                                                                                                                                                                                                                                                                                                                                              Sus scrofa (Pig).
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cytokine; Growth factor; Glycoprotein; Signal SIGNAL 1 17 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR00693; GMCSFACTOR, PRODOM; PD007349; GM_CSF; 1. SMART; SM00040; CSF2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00702; GM_CSF; 1
                                                                                                                                                                                                                                                                                                                                                                                                                Granulocyte-macrophage colony-stimulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CSF2_PIG
                                                                                                                                                                                                                            MEDLINE=96167041; PubMed=8595928;
                                                                                                                                                                                                                                                                                                                     TISSUE-Spleen;
                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9823;
                                                                                                                                                                                      [mmunol.
                                                                                                                                                                                                tactor.
                                                                                                                                                                                                         cDNA cloning of
                                                                                                                                                                                                                  Inumaru S.,
                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                               SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000773;
                                                                                                                                                                                                                                                                                                                                                                                                       Colony-stimulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78
                                                                                                                                   SUBUNIT: MONOMER.
                                                                                                                                                    INDI. Cell Biol. 73:474-476(1995).

FUCCTION: CYTOKINE THAT STIMUTES THE GROWTH AND DIFFERENTIATION OF HEMATOPOLETIC PRECURSOR CELLS FROM VARIOUS LINEAGES, INCLUDING GRANULOCYTES, MACROPHAGES, EOSINOPHILS AND ERYTHROCYTES (BY
                                                                                                                                              SIMILARITY)
                                                                                                                                                                                                                                                                                                              U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LYKQGLRGSLT
U61139;
U67318;
U67175;
D21074;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PF01109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                            (AUG-1996)
                                                                                                                                                                                                                                                                       .
E
                                                                                                                                                                                                                                                                                                    (JUL-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144
                                                                                                                                                                                                                   Takamatsu
                                                                                                                                                                                                                                                        M N.A.
., Sandeman R.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71
105
44
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.6%;
llarity 100.0%;
Conservative
; AAB03867.1; -.; AAB49939.1; -.; AAB06854.1; -.; BAA04649.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GM_CSF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       88
                                                                                                                                                                                                         porcine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113
138
44
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      144
                                                                                                                                                                                                                                                                                                               М.
Р
                                                                                                                                                                                                                                                                                                                                                              Chordata; Craniata; Vert
Cetartiodactyla; Suina;
                                                                                                                                                                                                                                                                                                                                                                                                       factor) (CSF).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GM_CSF
                                                                                                                                                                                                                                                                                                     ៥
                                                                                                                                                                                                                    Η.,
                                                                                                                                                                                                                                                                                                    the EMBL/GenBank/DDBJ
                                                                                                                                                                                                        granulocyte-macrophage colony-stimulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC..
N-LINKED (GLCNAC..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                           EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 11;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          o
O
                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    144
                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                            (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
0.0061;
                                                                                                                                                                                                                                                                                                                                                               Vertebrata;
ina; Suidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ą
                                                                                                                                                                                                                                                                                                                                                                                                                 factor
                                                                                                                                                                                                                                                            databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                    databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                         restrictions
                                                                      and
                                                                               st
                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                 (GM-CSF)
                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                           collaboration
                                                                                                     outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                       commercia.
                                                                                 50
                                                                                          on
                                                                                 way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
RESULT
CSF2_BC
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                       SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE=90021093; PubMed=2678728;

MEDLINE=90021093; PubMed=267878728;

Leong S.R., Flaggs G.M., Lawman M.J.P., Gray P.W.;

Colony-stimulating factor.";

Vet. Immunol. Immunopathol. 21:261-278(1989).

-I- FUNCTION: CYTOKINE THAT STIMULATES THE GROWTH AND DIFFERENTIATION OF HEMATOPOIETIC PRECURSOR CELLS FROM VARIOUS LINEAGES, INCLUDING OF HEMATOPOTES, MACROPHAGES, EOSINOPHILS AND ERYTHROCYTES (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
DISULFID
CARBOHYD
CARBOHYD
CARBOHYD
CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cytokine;
SIGNAL
                                                            This SWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF01109; GM_CSF; 1.
PRINTS; PR00693; GMCSFACTOR.
ProDom; PD007349; GM_CSF; 1.
SMART; SM00040; CSF2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
                      the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                              MEDLINE=89096971; PubMed=3062386;
Maliszewski C.R., Schoenborn M.A., Cerretti D.
Picha K.S., Cosman D., Tushinski R.J., Gillis
                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Ch
Mammalia; Eutheria; Ce
Rovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Granulocyte-macrophage colony-stimulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUL-1989 (Rel. 11, Created)
01-JUL-1989 (Rel. 11, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HSSP; P04141; 2GMF. InterPro; IPR000773;
                                                                                                                                                                                                                                                     "Bovine GM-CSF: molecular cloning recombinant protein."; mol. Immunol. 25:843-850(1988).
                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. MEDLINE=89096971;
                                                                                                                                                                                                                                                                                                                                                             Bovidae; Bovinae;
NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CSF2
                                                                                                                                                                                                                                                                                                                                                                                                                Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P11052;
                                                                                                                                                                                                                                                                                                                                                                                                                                       (Colony-stimulating factor) (CSF).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           609 LYKQGLRGSLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78
                                                                                                  GRANULOCYTES, MACROPHAGES, EOSING SIMILARITY).. SUBUNIT: MONOMER (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _BOVIN
                                                            SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LYKQGLRGSLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pS00702; GM_CSF; 1
; Growth factor; Gl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71
105
44
47
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113
138
44
47
54
59
140
                                                                                                                                                                                                                                                                                                                                                                                      Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GM_CSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 11; DB Pred. No. 0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ଦ <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GRANULOCYTE-MACROPHAGE FACTOR.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ' , v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       793DACB62CF736D0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  > I (IN REF. 2).
> E (IN REF. 2).
-> AQ (IN REF. 2)
                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                  erretti D.P.,
., Gillis S.,
d biological a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                 There are no restrictions ong as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
0.0061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J.0061;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , 2
, .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    precursor (GM-CSF)
                                                                                                                                                                                                                                                                                              Wignall
Baker P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COLONY-STIMULATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                        Bovoidea;
                                                                                                                                                                                                                                                                                  J.M.,
of the
                                                                           מ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                collaboration
                                                               outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                 1ts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

entities requires a license agreement (S
or send an email to license@isb-sib.ch).

(See http://www.isb-sib.ch/announce,

Usage

γď

and.

for

n no way

8 8

B Ş

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-JUL-1998
15-JUL-1998
16-OCT-2001
Zinc finger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
DISULFID
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSSP; P04141, 2GMF.
Interpro; IPR000773; GM_CSF.
Pfam; PF01109; GM_CSF; 1.
PRINTS; PR00693; GM_CSFACTOR.
ProDom; PD007349; GM_CSF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alc2.
Mus musculus (Mouse).
Mus musculus (Mouse).
Metazoa; Chordata;
Metazoa; Rodentia;
 PRINTS;
ProDom;
                                                                                                                                                                                         modified and this statement
                                                                                                                                                                                                                                                              This
                                                                                                                                                                                                                                                                                                                                                                                                                              Aruga J., Nagai T., Toku
Chapman V.M., Mikoshiba
                                                                                                                                                      entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Cerebellum;
MEDLINE=96132843; PubMed=8557628;
                                   InterPro; IPR000822; zni
Pfam; PF00096; zf-C2H2;
                                                                     TRANSFAC; T04670; MGD; MGI:106679;
                                                                                                                                                                                                                                               between
                                                                                                                                                                                                                                                                                                                                                                                  J. Biol.
                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             062520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIC2_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cytokine; Growth factor; Glycoprotein; Signal SIGNAL 1 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U22385; AAA66075.1; PIR; JL0037; FQBOGM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                         s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the Exercise Bioinformatics Institute. There are no restances to the control of the
                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: TISSUE SPECIFICITY: CI
                                                                                                                                                                                                                                                                                                            SIMILARITY: BELONGS TO THE GLI FAMILY
                                                                                                                                                                                                                                                                                                PROTEINS.
                                                                                                                                                                                                                                                                                                                                CEREBELLUM.
                                                                                                                                                                                                                                                                                                                                                                          mouse zic gene family. Homologues odd-paired."; 101. Chem. 271:1043-1047(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QEPTCLQTRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QEPTCLQTRL
                                                                                                      D70848; BAA11115.1; P08047; ISP2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SM00040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10; Conserv
   PR00048; ; PD000003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 400040; CSF2; 1.
PS00702; GM_CSF; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel. 36, Created)
(Rel. 36, Last sequence update)
(Rel. 40, Last annotation updat
protein ZIC2 (Zinc finger prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70
104
44
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
; ZINCFINGER.
3; Znf_C2H2; ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              607
                                                                      Z1c2
                                                                                                                                                                                                                                                                                                                                                                                                                                Tokuyama
shiba K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112
137
                                                                                                                                                                                                        institutions as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16157
                                                   znf_C2H2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                            CNS. A HIGH LEVEL
                                                                                                                                                                                                                                                                                                                                                                  Nucl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₹.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FACTOR.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
                                                                                                                                                                                        is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                              T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 10;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GRANULOCYTE-MACROPHAGE
                                                                                                                                                                                                                                                                                                                                                                  lear.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4A24E26A870A51EC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                               Hayashizaki Y.,
                                                                                                                                                                                                         long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
protein
                                                                                                                                                                         (See
                                                                                                                                                                                                                                                                                                                                                                                                                 of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
0.057;
                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                              EXPRESSION
                                                                                                                                                                                                         as
                                                                                                                                                                      http://www
                                                                                                                                                                                        Usage
                                                                                                                                                                                                                                                                                                            C2H2-TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of.
                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila pair-rule
                                                                                                                                                                                                         its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Okazaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                         γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COLONY-STIMULATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                SI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cerebellum
                                                                                                                                                                                                                       restrictions
                                                                                                                                                                        .isb-sib.
                                                                                                                                                                                                                                                                                                              ZINC-FINGER
                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                                                                SEEN
                                                                                                                                                                                                                                               EMBL
                                                                                                                                                                                           for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                               collaboration
                                                                                                                                                                                                                                                                                                                                                N
                                                                                                                                                                         ch/announce/
                                                                                                                                                                                                                                             outstation
                                                                                                                                                                                                                                                                                                                                                THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                         commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2)
                                                                                                                                                                                                                           9
                                                                                                                                                                                                           ö
                                                                                                                                                                                                           way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
ZIC2_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                   Brown S.A., Warburton D., Brown L.Y., Stengel-Rutkowski S., Hennekam R.C., M. "Holoprosencephaly due to mutations in odd-paired.";
EMBL;
EMBL;
HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZN_FING
ZN_FING
ZN_FING
ZN_FING
                                        the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entities requires a license agreement (See http://www.lsb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                 TISSUE-Brain;
MEDLINE-20556339; PubMed-10984499;
Yang Y., Hwang C.K., Junn E., Lee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
SEQUENCE
                                                                                                                                          -i- SUBCELLULAR LOCATION: Nuclear.

-i- DISEASE: DEFECTS IN ZIC2 ARE A CAUSE OF HOLOPROSENCEPHALY TYPE
(HPES), HPES IS A STRUCTURAL ANOMALY OF THE BRAIN.

-i- SIMILARITY: BELONGS TO THE GLI FAMILY OF C2H2-TYPE ZINC-FINGER
                                                                                                                                                                                    "ZIC2 and Sp3 repress Sp1-induced act receptor gene.";
J. Biol. Chem. 275:38863-38869(2000).
                                                                                               This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM
                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.,
MEDLINE=98442655; Pu
                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                   30-MAY-2000 (Rel. 39, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Zinc finger protein ZIC2 (Zinc finger protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIC2_HUMAN
095409; Q9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zinc-finger;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PS00028; PROSITE; PS50157;
                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     682 АААННННН
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                229
                                                                                                                                 PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                аааннинн
AF104902; AAC96325.1;
AF193855; AAG28409.1;
P08047; 1SP2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SM00355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9H3O9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S00028; ZINC_FINGER_C2H2_1; 3.
S50157; ZINC_FINGER_C2H2_2; 4.
r; Metal-binding; DNA-binding; R
20 23 POLY-HIS.
25 33 DOTY-TIS.
                                                                                                                                                                                                                                                                           20:180-183(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A., AND VARIANT HPE5 PO
; PubMed=9771712;
urton D., Brown L.Y., 1
1 S., Hennekam R.C., M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.3%;
                                                                                                                                                                                                           Sp1-induced activation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POLY-ALA.
POLY-ALA.
POLY-HIS.
ZINC FINGERS.
C2H2-TYPE (AT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 9; 1
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C2H2-TYPE.
C2H2-TYPE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POLY-ALA.
0065BD75B52E7DD2 CRC64;...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                      G.,
                                                                                                                                                                                                                                                                                             Muenke M.;
ln ZIC2, a homologue of Drosophila
                                                                                                                                                                                                                                                                                                                                           POLY-ALA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            532 AA.
                                                                                                                                                                                                           Mouradian M.M ivation of the
                                                                                                                                                                                                                                                                                                                        Υu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ATYPICAL).
                                                                                                                                                                                                                                                                                                                       C.Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Repeat; Nuclear protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
6;
                                                                                                                                                                                                                                                                                                                                                                            Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                      of.
                                                                                                                                                                                                                                                                                                                                             INSERTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 530;
                                                                                                                                                                                                                                                                                                                       Roeder
                                                                                                                                                                                                                                                                                                                                                                                                                      the cerebellum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                            human
                                                                                                                                                                                                                                                                                                                                                                                       Euteleostom1;
                                                                                                                                                                                                                                                                                                                                                                            Hono
                                                                                                                                                                                                                                                                                                                       E.R.,
                                                                                      restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                   į
                                                                                                  EMBL
                                                                                                                                                                                                             D!A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                    collaboration
L outstation -
                                                                                                                                                                                                           dopamine
                                                       ch/announce/
                                                                                                  outstation
                                                                 in no way commercial
                                                                                                                                                                                                                                                                                                                                                                                                                      2
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

TRANSFAC; T04237;

collaboration

5 9

This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed.

```
RESULT 15

REFR_CHICK
ID REFR_C
AC P13387
DT 01-JAN
DT 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JAN-1990 (Rel. 01-JAN-1990 (Rel. 15-JUN-2002 (Rel. Epidermal growth (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZN_FING
ZN_FING
ZN_FING
ZN_FING
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGFR_CHICK P13387;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                         Lax I., Johnson A., Howk R., Sap J., Bellot F., Winkler M., Ullrich A., Vennstrom B., Schlessinger J., Givol D.; "Chicken epidermal growth factor (EGF) receptor: cDNA cloning, expression in mouse cells, and differential binding of EGF and transforming growth factor alpha."; moi. Cell. Biol. 8:1970-1978(1988).

-I- FUNCTION: THE EGF RECEPTOR MEDIATES THE BIOLOGICAL SIGNAL OF EGAND ALSO OF TGF-ALPHA, AMPHIREGULIN, HEPARIN-BINDING EGF, GP30 VACCINIA VIRUS GROWTH EACTOR (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00028; ZINC_FINGER_C2H2_1; 3.
PROSITE; PS50157; ZINC_FINGER_C2H2_2; 4.
Zinc-finger; Metal-binding; DNA-binding; Repeat; Nuclear protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProDom; PD000003; znf_C2H2; 1.
SMART; SM00355; znf_C2H2; 4.
                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. MEDLINE-88261272; PubMed-3260329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disease mutation; Holoprosencephaly
                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     682 АЛАННННН
                    tyrosine phosphate.
SUBCELLAULAR LOCATION: Type I membrane protein.
MISCELLAUGH LOCATION: Type I membrane protein.
MISCELLAUGUS: Binding of EGF to the receptor leads to dimerization, internalization of the EGF-receptor compliance activity, stimulation of the tyrosine kinase activity, stimulation synthesis, and cell proliferation.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                        CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    603073;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             аланннннн
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PF00096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HGNC: 12873;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              124
532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Rel. 13, Created)
(Rel. 13, Last sequence update)
(Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.3%;
llarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3000
3000
3000
3000
3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Neognathae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              128 I
55006 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIC2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Znf_C2H2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receptor precursor (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C2H2-TYPE.
POLY-ALA.
POLY-GLY.
A -> AAAAAAAAAAA (IN HPE5).
/FTId=VAR.008856.
RGFGD -> ARLPGT (IN REF. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POLY-HIS.
ZINC FINGERS.
C2H2-TYPE (AT
C2H2-TYPE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 9; 1
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POLY-ALA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C2H2-TYPE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi;
; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BA3E6455DAF97EAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ATYPICAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
6, 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (IN REF. 1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.7.1.112) (CER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                                                                ation of
                                                                                                                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                     cel1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                  EGF,
                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
밁
                             õ
                                                          Query Match
Best Local S
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                 DISULFID CARBOHYD
                                                                                                                                                                                                                                                                                                                               DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
DISULFID
DISULFID
                                                                                                                     NON_TER
SEQUENCE
                                                                                                                                                                                              CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M20386; AAA48760.1; ...
InterPro; IPR000494; EGFR.L_domain.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR0002174; FurIn-like.
InterPro; IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE; PS00109; PROTEIN_KINASE_TYR; PARTIAL.
PROSITE; PS50011; PROTEIN_KINASE_DOM; PARTIAL.
Transmembrane; Glycoprotein; Receptor; Signal; Transferase;
Tyrosine-protein kinase; ATP-binding; Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00757; Furin-like; 1.

pfam; PF01030; Recep_L_domain; 2.

SMARP; SM00261; FU; 4.

PROSITE; PS00107; PROTEIN_KINASE_ATP; PARTIAL.
                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a
   242
8 QCAAGCTGP 266
||||||||
2 QCAAGCTGP 250
                                                          Similarity 100
9; Conservative
                                                                                                                       Ą,
                                                                                                               646
190
200
359
368
420
420
573
578
613
613
643
703
                                                                                                                                                                                                                                                                                                                               license agreement
                                                                          1.3%;
                                                                                                                       ¥.
                                                                                                                                              EXTRACELLULAR (POTENTIAL).

POTENTIAL.

CYTOPLASMIC (POTENTIAL).

BY SIMILARITY

                                                             0
                                                                           Score 9;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EPIDERMAL GROWTH FACTOR RECEPTOR
                                                                                                                       AFF2DE11B735A690
                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (See http://www.isb-sib.ch/announce/
                                                                           . DB
                                                            0;
                                                                                        Length 703
                                                                                                                     CRC64;
                                                             Indels
                                                                                                                                                                                         (POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                    (POTENTIAL)
                                                             0
                                                             Gaps
                                                , <u>o</u>
                                                                                     . :
```

Search completed: April 28, 2003, 13:44:58 Job time : 17 secs

OUEN WHO TONG SHIP

```
Minimum DB
Maximum DB
                                                                                                                                                                                             Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Listing first 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OLIGO
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          April 28, 2003, 13:42:59; Search time 42 Seconds (without alignments) 3385.060 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-821-883-2
690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            671580 segs, 206047115 residues
     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPTREMBL_21:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MRAAPLLLARAASLSLGFLF......EPVQEGAPPPPAAAHHHHHH
                                                                                                                                                                                                                                                                                            sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                        sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                   sp_phage: *
                                                                                                                                                                                                                                                                                                                                                                                            sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                              sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                        sp_numan:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                   sp_fungi:*
                                                                                                                                                                                                                                                                                                                                       sp_virus:*
sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                            sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                       sp_plant:*
                                                                                                                                                                                            Length
   386
418
367
144
386
146
152
138
253
292
                                                                                                                                                                                             DВ
   Q9BG56
Q1B735
Q1B735
Q1B735
Q1B736
Q1B736
Q1B736
Q1B737
Q1B737
Q1B737
Q1B737
Q1B737
Q1B737
Q1B737
Q1B737
                                                                                                                                                           Q9UK79
Q14256
                                                                                                                                                                                             IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           summaries
                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 671580
O9g144 macaca mula
O96ky0 homo sapien
O96gm0 homo sapien
O96gm0 homo sapien
O8r2x1 mus musculu
O9myk4 ovis aries
O96gk9 homo sapien
O8wn17 equus cabal
O95110 equus cabal
O95910 marmota mon
O8xu41 raistonia s
O8x723 oryza sativ
                                                                                                                        Q9uk79
Q14256
Q8wyv0
Q9bg66
Q18735
                                                                                                                                                                                             Description
                                                                                                                       9 homo sapien
6 homo sapien
0 homo sapien
6 oryctolagus
5 canis famil
```

, A A A A A A A A A A A A A A A A A A A	0 0 0
643 655 693 1209 1210 1716 1716 1716 1716 1716 1716 1716 17	478 527
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	111
Q9ERV6 Q9WVF1 Q9WVF1 Q9VMU1 Q96680 Q9QX70 Q9488 Q8R585 Q900837 Q941M0 Q9XX83 Q8XX14 Q9XX83 Q8XX14 Q9XX83 Q8XX14 Q9XX83 Q8XX14 Q9XX83	Q9ESE0 Q90836
mus mumus mus	O9eseO rattus norv O90836 gallus gall

## ALIGNMENTS

<b>9</b> у	Mae Ou	SQ	DR	DR	ב ג ג	DR	DR	RL	RA	RP	RN	RL	RT	RT	RA	RX	RP	RN	õ	8	8	20	GN GN	DE	DT	Ŋ	DT	ð	ij	RESULT
38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97 	Query Match 42.3%; Score 292; DB 4; Length 419; Best Local Similarity 100.0%; Pred. No. 2.4e-288; Matches 292; Conservative 0; Mismatches 0; Indels 0; Gaps C	വ	SM00261;	PF01030; Recep_L_dom	Incerro; irkuuzi/4; rurin-like. Pfam: PF00757: Furin-like: 1.		EMBL; AF177761; AAD56009.2;	EMBL/GenBank/DDBJ da	Doherty J.K., Clinton G.M., Adelman J.P., Evans A.J., Henner W.D.;	SEQUENCE FROM N.A.		Proc. Natl. Acad. Sci. U.S.A. 96:10869-10874(1999).	autoinhibitor.";	"The HER-2/neu receptor tyrosine kinase gene encodes a secreted	Doherty J.K., Bond C., Jardim A., Adelman J.P., Clinton G.M.;	MEDLINE-99415951; PubMed-10485918;	SEQUENCE FROM N.A.	[1]		Catarrhini; Hominidae	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	Homo sapiens (Human).	HER-2.	Herstatin.	(TrEMBLrel. 21, Last	(TrEMBLrel. 16,	-2000 (TrEMBLrel.		Q9UK79 PRELIMINARY; PRT; 419 AA.	779 · · · · · · · · · · · · · · · · · ·
	<b>;</b> .	٠																			•								•	

```
RESULT
Q8WYV0
ID Q8
AC Q8
DT 01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 11 2010 1
                                                                                                                                                                                   ş
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  [2]
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-94000386; PubMed-8104414;
Sarkar F.H., Ball D.E., Li Y.W., Crissman J.D.;
Sarkar F.H., Ball D.E., Li Y.W., Crissman J.D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1996
01-NOV-1996
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q14256;
Q14256;
Q8WYV0;
01-MAR-2002
                                         OAKA80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.

MEDLINE-86070181; PubMed-2999974;

MEDLINE-86070181; PubMed-2999974;

Coussens L., Yang-Feng T.L., Liao Y.C., Che
Seeburg P.H., Libermann T.A., Schlessinger
Levinson A., Ullrich A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C-erb B2/neu
C-ERB B2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Tyrosine kinase receptor with extensive homology shares chromosomal location with neu oncogene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C-ERB b4.
Homo sapiens (Human).
Chordata;
                                                                                                                                                                                                                                                                                                                                                             373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID-9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clence
                                                                                                                                                  121
                                                                                                                                                                                           493
                                                                                                                                                                                                                                                                            433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158
                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98
                                                                                                                                                                                                                                                                                                                     -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cell Biol. 12:611-615(1993).
L; M95667; AAC37531.1; -.
                                                                                                                                             GGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAEN
                                                                                                                                                                                                                                                                                                               AGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                      NQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                      165;
                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                230:1132-1139(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     165 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel. 01, Created)
(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 19, Last annotation updat
  (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17327 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                        23.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Fragment).
  20,
  Created)
                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                          Score 165;
Pred. No.
                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A0C113BA308BF46B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                           412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , Chen L
                                                                                                                                                                                                                                                                                                                                                                                                                        2.2e-159;
                                         ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E., Gray A., McGrath
                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of Her-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                       537
                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ERBB2)
                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                          492
                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                           432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              157
                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
Q9BG66
  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SQUED DARRED DE RESTRETA DE RE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 132; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ol-MAR-2002 (TrEMBLrel. 20, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation updathypothetical 44.7 kDa protein. pp3659.
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
Klonisch T., Wolf P.,
Tetens F., Fischer B.;
                                                                  Kinase
                                                                                                                  InterPro; IPR002174; Furin-like.
Pfam; PF00757; Furin-like; 1.
                                                                                                                                                               "ErbB genes and epidermal growth factor- (EGF-) peri-implantation rabbit uterus and blastocyst. Submitted (JAN-2001) to the EMBL/GenBank/DDBJ dembl; AF333178; AAK14371.1;
                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Mammalia; Eutheria; NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                              Receptor tyrosine kinase ErbB2 (Fragment).
Oryctolagus cuniculus (Rabbit).
Eukaryota, Metazoa; Chordata; Craniata; Vej
Mammalia; Eutheria; Lagomorpha; Leporidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-OCT-2001 (TrEMBLrel. 18, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Prodom; PD000001; Euk_pkinase; 1.
SMART; SM00219; TyrKc; 1.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Huang Y., Zhou X.M., Zhang P.P., Jiang Wan D.F., Gu J.R.; "Novel human cDNA clones with function growth.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                            NON_TER
                                                                                            SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9BG66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09вG66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPRO04019; YLP_m
Pfam; PF00069; pkinase; 1.
Pfam; PF02757; YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (NOV-2000)
EMBL; AF318349; AAL5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical protein.
SEQUENCE 412 AA; 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000719;
InterPro; IPR001245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002048;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PAARPAGATLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAARPAGATLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
149
149,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
  Ŗ,
                                                                                            FU;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000) to the AAL55856.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     461
  149
16240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44702 MW; 034397FF3F27D2BC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tyr_pkinase.
YLP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19.1%; Score 132; DB 4; L
100.0%; Pred. No. 2.2e-125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euk_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EF-hand
                                                                                                                                                                                                                                                                                    Hombach-Klonisch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
  Ĭ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL/GenBank/DDBJ databases.
  7CB3792A54FC49BA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                     factor- (EGF-) like ligands
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           149
                                                                                                                                                                                                                                                                                    s:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                         Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inhibiting cancer cell
                                                                                                                                                                                                                                                                                    Vogt S.,
                                                                                                                                                                                                                                                                                                                                                                                 Oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
10
                                                                                                                                                                                         databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₩.×.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                    Kuechenhoff
                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ×. T.
                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            389
```

. . .

뭐 á В Q

```
RESULT
Q9GL44
ID Q9
AC Q9
DT 01
DT 01
                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 67
                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                      PRODOM; FULL 3.

SMART; SM00261; FU; 3.

SMART; SM00219; TYPKC; 1.

SMART; SM00219; TYPKC; 1.

PROSITE; PS00010; EF_HAND; UNKNOWN_1.

PROSITE; PS00107; PROTEIN_KINASE_DOM; 1.

PROSITE; PS00101; PROTEIN_KINASE_TYR; 1.

PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.

ATD-binding; Transferase; Tyrosine-protein kinase.

ATD-binding; Transferase; Tyrosine-protein kinase.

ATD-binding; Transferase; Tyrosine-protein kinase.
O9GL44 PRELIMINARY;
O9GL44;
O1-MAR-2001 (TrEMBLrel. 1
01-MAR-2001 (TrEMBLrel. 1
01-DEC-2001 (TrEMBLrel. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JAN-1998
01-JAN-1998
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF01030; Recep_L_domain; Pfam; PF02757; YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00757; Furin-like; 1. Pfam; PF00069; pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (OCT-1997) to the EMBL; AB008451; BAA23127.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canis familiaris (Dog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   018735;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    018735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSSP; P11362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Okota H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134
                                                                                                                                                          292
                                                                                                                                                                                        311
                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nterPro; IPR002174; Furin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74
                                                                                                                                                                                      GASCVT 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FGASCVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GASCVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FGASCVT 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYT:309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ch 9.7%;
1 Similarity 100.0%;
67; Conservative (
                                                                                                                                                                                                                                                                                             66;
                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR000494; EGFR_L_domain
IPR000719; Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR004019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR001245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTrEMBLrel.
GTrEMBLrel.
GTrEMBLrel.
                                                                                                                                                        297
                                                                                                                                                                                                                                                                                           larity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of erbB-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tyr_pkinase
                                                                                                                                                                                                                                                                                                                               9.68;
   16,
19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from
Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       m canine mammary gland.";
EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                           Score 66;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67;
                                                                                                                                                                                                                                                                                    ; DB 6; L.,
40. 1.1e-57;
0;
                                                                      144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 6; Le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Å
                                                                                                                                                                                                                                                                                                                         Length 1259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 149;
                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
Canis.
                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
Q96KY0
 AC QODT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
                                                                                                                                      밁
                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                             AC DE CONTRACTOR OF CONTRACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                      Query Match
Best Local S
Matches 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            submitted (AUG-2000) to the EMBL/GenBank/DDBJ day
EMBL; AY007376; AAG16626.1; -
HSSP; PO4141; 2GME;
InterPro; IPR000773; GM_CSF.
Pfam; PF01109; GM_CSF; 1.
PRINTS; PR00693; GMCSFACTOR.
ProDom; PD007349; GM_CSF; 1.
SMART; SM00040; CSF2; 1.
PROSITE; PS00702; GM_CSF; 1.
PROSITE; PS00702; GM_CSF; 1.
PARSIANT 60 60 V -> I.
Q96QM0 PRELIMINARY;
Q96QM0;
01-DEC-2001 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q96KY0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hutchinson K.L., Villinger F., Mariner Peters C.J., Rollin P.E.;
"Multiplex analysis of cytokines in the sera "Multiplex analysis of cytokines in the sera "Arth Rhola (Reston).";
                                                                                                                                                                                                                                                                      Interpro; IPR000560; Hisac_phsphtse.
Pfam; PF00328; acid_phosphat; 1.
PROSITE; PS00616; HIS_ACID_PHOSPHAT_1; UNKNOWN_1.
PROSITE; PS00778; HIS_ACID_PHOSPHAT_2; UNKNOWN_1.
SEQUENCE 386 AA; 44540 MW; FE90E10CEBECADEA CRC64;
                                                                                                                                                                                                                                                                                                                                                           Strausberg R.;
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ
EMBL; BC016344; AAH16344.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-DEC-2001 (TrEMBLrel. 19, 01-DEC-2001 (TrEMBLrel. 19, 01-MAR-2002 (TrEMBLrel. 20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cercopithecinae; Macaca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Macaca mulatta (Rhesus macaque)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Granulocyte-macrophage colony-stimulating factor
                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
TISSUE-PROSTATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Acid phosphatase, prostate. Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9544;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
36; Conserv
                                                                                                                                                                                                          35; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               144 AA; 16177 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5.2%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                      5.1%; S
llarity 100.0%;
Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chordata;
   19,
19,
                                                                                                                                                                                                      Score 35; DB 4; pred. No. 1.3e-; Pred. No. 1.3e-;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation updat
 Created)
Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 36;
Pred. No.
                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -> I.
7D5F381DA2FC832F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.8e-28;
                                                                                                                                                                                                                        1.3e-26;
                                                                                                                                                                      35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₹
                                                     ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ksiazek T.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 databases.
                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                                                                                                                        Length 386;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cynomolgus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    macaques
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                          Gaps
```

0;

밁 δ 밁 δÃ

```
RESULT
ID REACT
PORTON
   RESULT 10
Q9MYKA
ID Q9MYK
AC Q9MYK
AC Q9MYK
AC Q9MYK
AC Q9MYK
OT 01-OC
DT 01-DE
Granu
OS Ovis
OC Eukar
OC Eukar
OC Mamma
OC MAmma
OC NCBI
RN (1)
RN (1)
RN (5)
RP SEQUE
RX MEDLI
RA O'Bri
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 35
                                                             Ovis aries (Sheep).

Cukaryota; Metazoa; Chordata; Craniata;
Mammalla; Eutheria; Cetartiodactyla; Run
Bovidae; Caprinae; Ovis.

NCBI_TaxID=9940;
                                                                                                                                                           O9MYK4;
01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-2002 (TIEMBLIEL 21, Cr
01-JUN-2002 (TIEMBLIEL 21, La
01-JUN-2002 (TIEMBLIEL 21, La
Hypothetical 40.2 kDa protein.
Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Strausberg R.;
Submitted (APR-2002) to the
EMBL; BC027080; AAH27080.1;
Hypothetical protein.
SEQUENCE 367 AA; 40163 M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00328; acid_phosphat; 1.
PROSITE; PS00616; HIS_ACID_PHOSPHAT_1; UNKNOWN_1.
PROSITE; PS00778; HIS_ACID_PHOSPHAT_2; UNKNOWN_1.
SEQUENCE 418 AA; 48308 MW; 68E10406974E4462 C
 O'Brien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (MAY-2001) to the EMBL/Gen EMBL; BC007460; AAH07460.1; -. InterPro; IPR000560; HisAc_phsphtse.
                   SEQUENCE FROM N.A. MEDLINE=91331592;
                                                                                                                                                      Granulocyte-macrophage colony-stimulating
                                                                                                                                                                                                                                            Q9MYK4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q8R2X1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Strausberg R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota;
Mammalia; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Acid phosphatase, pr
Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAR-2002
Acid phospha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-PROSTATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                               463
                                                                                                                                                                                                                                                                                                                               283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKEL 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKEL
                                                                                                                                                                                                                                                                                                                            KTLSPGKNGVVKDVFAFGGAVENPEYL 489
                                                                                                                                                                                                                                                                                                                                                                                             th 3.9%; Score 27;
Similarity 100.0%; Pred. No.
27; Conservative 0; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
35; Conserv
     v
     .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5.1%;
llarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. 20, atase, prostate.
                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N.A.
     Rothel
                   PubMed-1869289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40163 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata;
     'n
     Seow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 35;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                0BE03395F9E101B0
 H.F.,
                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence update) annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 annotation update)
                                                                                                      Ruminantia; Pecora;
                                                                                                                                                                                                                                          144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      367
 Mood
                                                                                                                                                                                                                                                                                                                                                                                                               DB 11; 1
1.7e-18;
                                                                                                                  Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.4e-26
                                                                                                                                                                                                                                          ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₹
                                                                                                                                                    factor (Fragment)
   ס
                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 418
                                                                                                                                                                                                                                                                                                                                                                                                                             Length 367;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
; Murinae; Mus
                                                                                                                      Euteleostomi;
                                                                                                      Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                       RESULT 12
Q8WN17
 RA RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RT DR DR DR DR DR DR DR DR FT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 22
Vecchione
Catchpole
                                                                                                                                      GM-CSF.
                                                                                                                                                                                                                                          08WN17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q96QK9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                            16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67
```

```
"Cloning and sequencing of the cDNA for ov colony stimulating factor (GM-CSF)."; Immunol. Cell Biol. 69:51-55(1991). EMBL; X55991; CAA39463.1; -. HSSP; P04141; 2GMF. InterPro; IPR000773; GM_CSF. I. Pfam; PF01109; GM_CSF; 1. PRINTS; PR00693; GM_CSF; 1. SMARF; SM00040; CSF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (MAY-2001)
EMBL; BC008493; AAH08493; 1; -.
EMBL; BC008493; AAH08493; 1; -.
InterPro; IPR000560; HISAC_phsphtse.
Pfam; PF00328; acid_phosphat; 1.
PROSITE; PS00616; HIS_ACID_PHOSPHAT_1; UNKNOWN_1.
PROSITE; PS00778; HIS_ACID_PHOSPHAT_2; UNKNOWN_1.
PROSITE; PS00778; HIS_ACID_PHOSPHAT_2; UNKNOWN_1.
A4D817CECIDC1A84 CRC64;
                                                                       Equus caballus (Horse).
Eukaryota; Metazoa; Chordata; Crani
Mammalia; Eutheria; Perissodactyla;
                                                                                                                                   OBWN17:
01-MAR-2002 (TrEMBLrel. 20, Created)
01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Grannlocyte-macrophage colony-stimulating factor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PS00702; GM_CSF; 1.
NON_TER 144 144
SEQUENCE 144 AA; 16290 MW
                                                         Eukaryota; Metazoa; Mammalia; Eutheria; NCBI_TaxID=9796;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q96QK9;
01-DEC-2001 (TrEMBLrel. 19,
01-DEC-2001 (TrEMBLrel. 19,
01-MAR-2002 (TrEMBLrel. 20,
                               SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strausberg R.;
Submitted (MAY-2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-PROSTATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Acid phosphatase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 598 QEPTCLQTRLELYKQGLRGSLT
                                                                                                                                                                                                                                                                                                          16 LGFLFLLFFWLDRSVLAKEL
                                                                                                                                                                                                                                                                                             LGFLFLLFFWLDRSVLAKEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QEPTCLQTRLELYKQGLRGSLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . Similarity
22; Conserv
                                                                                                                                                                                                                                                                                                                                                                        Similarity
.
В.,
                                                                                                                                                                                                                                                                                                                                                     2.9%;
nilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
               á
                               z
                 Mello
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              prostate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16290 MW;
               ъ
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.2%;
                                                                                                                                                                                                                                                                                             35
                                                                                                                                                                                                                                                                                                                        35
                 Kanellos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                619
                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 22; DB; Pred. No. 8.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                      Score 20;
Pred. No.
                                                                         Craniata; Vertebrata;
ctyla; Equidae; Equus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; V
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABAAD7633B580008 CRC64;
                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence update)
                   н
               .s.
                                                                                                                                                                                                                                                                                                                                                                      DB 4; L
2.4e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 6; L
8.6e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vertebrata;
i; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ovine
                                                                                                                                                                                                                    ζ
                 Howard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          granulocyte-Macrophage
                                                                                                                                                                                                                                                                                                                                                                                   Length 386;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 144;
               Ω
                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                            Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                 Hamblin
                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                 A.S.
                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
RESULT
OPERIOR
      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RT DR DR DR DR DR DR DR DR SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF01109; GM_CSF; 1.
PRINTS; PR00693; GM_CSF; 1.
ProDom; PD007349; GM_CSF; 1.
SMART; SM00040; CSF2; 1.
PROSITE; PS00702; GM_CSF; UNKNOWN_1
NON_TER 146 146
SEQUENCE 146 AA; 16594 MW; 162C191
                                                                                                                                                                 Q99J91 PRELIMINARY; PRT; 138 AA.
Q99J91;
Q1-JUN-2001 (TrEMBLrel. 17, Created)
Q1-JUN-2001 (TrEMBLrel. 17, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Granulocyte-macrophage colony stimulating factor precursor.
Marmota monax (Woodchuck).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "cDNA for
Submitted
EMBL; AF44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q95L10;
SEQUENCE FROM N.A.
Wu H.-L., Chen P.-J.,
"Molecular Cloning an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (NOV-2001) to the EMBL/GenBank/DDBJ databases. EMBL; AY040203; AAKT2108.2; -
INTERPOOR I PRO00073; GM_CSF.
Pfam; PF01109; GM_CSF; 1.
PROSSITE; PS00702; GM_CSF; 1.
PROSSITE; PS00702; GM_CSF; UNKNOWN_1.
SEQUENCE 152 AA; 17173 MW; 75605CC1ADE9EFE9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-DEC-2001 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
01-MAR-2002 (TrEMBLrel.
                                                                                                                                                          Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mauel S., Commandeur U., Steinbach F.;
"Cloning of equine granulocyte-macrophage
(eq.GM-CSF).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Granulocyte-macrophage
                                                                                        NCBI_TaxID=9995;
                                                                                                                                    Mammalla;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Equus caballus (Horse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VCBI_TaxID=9796;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            623
                                                                                                                                                                                                                                                                                                                                                        14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92
                                                                                                                                                                                                                                                                                                                                                                                                                            92
                                                                                                                                                                                                                                                                                                                                                                                                                                              GPLTMMASHYKQHCPPT 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GPLTMMASHYKQHCPPT 639
                                                                                                                                                                                                                                                                                                                                                                                                                          GPLTMMASHYKQHCPPT 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GPLTMMASHYKQHCPPT 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of for equine GM-CSF.";
tted (NOV-2001) to the
AF448481; AAL41017.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ch 2.5%;
l Similarity 100.0%;
17; Conservative (
                                                                                                                                 Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000773; GM_CSF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.5%;
Larity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
    and
                                                                                                                                    Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chordata; Craniata; Vertebrata; Perissodactyla; Equidae; Equus.
  Lin H.-K., I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19, Last sequence update)20, Last annotation update)colony-stimulating-factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19,
20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 17;
Pred. No.
                                                                                                                               Craniata; Vertebrata; Euteleostomi; Sciurognathi; Sciuridae; Sciurinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162C19152391281E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
  Lee
n of
  R.-S., Lin H.-L., Chen D.-S.; Woodchuck Granulocyte-Macrophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.1e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1.1e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         colony-stimulating-factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

Search completed: April Job time: 47 secs

28,

2003,

13:45:48

0

```
RESULT 15
Q8XU41
밁
                   õ
                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SQ PTT
                                           Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000773; GM_CSF.
Pfam; PF01109; GM_CSF; 1.
PRINTS; PR00693; GMCSFACTOR.
ProDom; PD007349; GM_CSF; 1.
SMART; SM00040; CSF2; 1.
PROSITE; PS00702; GM_CSF; 1.
                                                                                                                                                                                                                                                                                                      QBXU41;
01-MAR-2002 (TrEMBLrel. 20, Created)
01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation updat
Hypothetical transmembrane protein RSc3353.
RSC3353 OR RSO2628.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Signal
SIGNAL
                                                                                                 Salanoubat M., Genin S., Artiguenave F., Gouzy J., Mangenot S Arlat M., Billault A., Brottler P., Camus J.C., Cattolico L., Chaidler M., Choisne N., Claudel-Renard C., Cunnac S., Demang Gaspin C., Lavie M., Moisan A., Robert C., Saurin W., Schiex Siguier P., Thebault P., Whalen M., Wincker P., Levy M., Weissenbach J., Boucher C.A.; "Genome sequence of the plant pathogen Ralstonia solanacearum Nature 415:497-502(2002).

EMBL; AL646074; CAD17141.1; -.

Hypothetical protein; Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Colony Stimulating Factor.";
Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF255734; AAG49541.1; -.
EMBL; AF255735; AAG49542.1; -.
EMBL; P04141; ZGMF.
                                                                                                                                                                                                                                                                                                                                                                                     Q8XU41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                         SEQUENCE
                                                                                                                                                                                                                     MEDLINE=21681879; PubMed=11823852;
                                                                                                                                                                                                                                  STRAIN-GMI1000;
                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                       Ralstonia solanacearum (Pseudomonas solanacearum)
Bacteria; Proteobacteria; beta subdivision; Ralst
                                                                                                                                                                                                                                                                               Ralstonia
                                                                                                                                                                                                                                                                 NCBI_TaxID=305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  599 EPTCLQTRL
83
                                                                                                                                                                                                                                                                                                                                                                                                                                             89
                       σ
                       LLLARAASL
LLLARAASL
                                                                                                                                                                                                                                                                                                                                                                                                                                              EPTCLQTRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9; Conserv
                                           Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         138
                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
76
                    14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ä,
                                                                                         Ã,
                                                                                                                                                                                                                                                                                                                                                                                                                                              76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19
138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15297 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.3%;
                                                                                         26668
                                                       100.0%;
                                                                                         Œ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                            0
                                           Score 9; DB 1
Pred. No. 2.6
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 9; DB 1
Pred. No. 1.4
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GRANULOCYTE-MACROPHAGE COLONY FACTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                        proteome.
95DBEB88FA9F0B58 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A6B9E04035A806FD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                      253
                                                      .6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                          Ralstonia
                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                  Length 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 138;
                                                                                                                                        solanacearum.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                            Indels
                                                                                                                                                                                                                                                                                        group;
                                                                                                                                                                                  Demange N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STIMULATING
                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
```

THIS PROCE BLANK WSMO)

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                      Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                   No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                      Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OLIGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  April 28, 2003, 13:44:15; Search time 17 Seconds (without alignments) 1194.224 Million cell updates/sec
  Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-821-883-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Issued_Patents_AA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MRAAPLLLARAASLSLGFLF......EPVQEGAPPPPAAAHHHHHH 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/1/1aa/5A_COMB.pep:*
/cgn2_6/ptodata/1/1aa/5B_COMB.pep:*
/cgn2_6/ptodata/1/1aa/6A_COMB.pep:*
/cgn2_6/ptodata/1/1aa/6B_COMB.pep:*
/cgn2_6/ptodata/1/1aa/6B_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cgn2_6/ptodata/1/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                       Length DB
            US-08-422-734-1
US-08-414-4178-69
US-08-468-348A-69
US-08-368-5458-69
US-08-318-193-19
US-08-318-193-19
US-08-318-193-160
US-08-469-318-160
US-08-469-318-160
US-08-468-872A-160
US-08-762-227A-160
                                                                                                                                                                                                                                                US-08-579-823A-4
US-09-344-195-4
US-08-467-083-68
US-08-414-417B-68
US-08-484-438-8
US-08-486-348A-68
                                                                                                                                                                                                                                                                                                                                                                      H
                                                                                                                                                                                 US-08-466-680B-68
US-08-422-108-1
                                                                                                                                                                                                           US-08-468-545B-68
US-08-356-786-2
                                                                                                                                                                                                                                                                                                                                US-09-630-155-2
US-09-146-283-4
                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              parameters:
                                                                                                                                                                                                                                                                                                                                                                      Description
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                              Sequence
Sequence
                                               Sequence
                                                                            Sequence
                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                    Sequence
                                                                                          Sequence
                                                                                                      Sequence
                                                                                                                                Sequence
                                                                                                                                           Sequence
                                                                                                                                                          Sequence
                                                                                                                                                                     Sequence
                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                            Sequence
                        160, App
160, App
160, App
                                                              8, Appli
10, Appl
2, Appli
5229496
                                                                                                              1, Appli 69, Appl 69, Appl 69, Appl 69, Appl 69, Appl
                                                                                                                                                                                                                                                                                                2, Appli
4, Appli
4, Appli
4, Appli
                                                                                                                                                                                                                                                                            68, Appl
68, Appl
                                                                                                                                                                  68, Appli
1, Appli
1, Appli
                                                                                                                                                                                              68,
                                                                                                                                                                                                                        68,
                                                                                                                                                                                                                                                   68,
                                                                                                                                                                                                                                   Appli
Appli
                                                                                                                                                                                                                                                              Appl
                                                                                                                                                                                                          Appli
                                              Qy
Q
                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                      38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
98 EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                         19 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
```

	45	44	43	42	41	40	39	38	37	36	35	34	သ	32	31	30	29	28
	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127
	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
	301	301	301	301	274	274	274	274	274	259	259	259	259	259	144	144	144	131
	4	4	w	w	Ų	4	4	w	ω	G	4	4	ω	w	Ç	4	_	6
ALIGNMENTS	US-08-762-227A-142	US-08-446-872A-142	US-08-468-609A-142	US-08-469-318-142	PCT-US95-01185-144	US-08-762-227A-144	US-08-446-872A-144	US-08-468-609A-144	US-08-469-318-144	PCT-US95-01185-141	US-08-762-227A-141	US-08-446-872A-141	US-08-468-609A-141	US-08-469-318-141	PCT-US95-08950-11	US-09-522-217-114	US-08-284-393B-11	5229496-2
	Sequence 142, App			Sequence 142, A		Sequence 144, A	Sequence 144, A	Sequence 144, A	Sequence 144, A		' Sequence 141, A			Sequence 141, A	<ul><li>Sequence 11, Ap</li></ul>	Sequence 114, A	Sequence 11, Ap	Patent No. 5229496
	gg	qq	gg	gg	gg	qq	qq	PP	рр	P P	qq	qq	đđ	Ð.	P	qq	P.	96

```
TOPOLOGY: unknown

MOLECULE TYPE: polypeptide

SEQUENCE DESCRIPTION: SEQ ID NO:
US-09-630-155-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-630-155-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/09630155
Patent No. 6414130
GENERAL INFORMATION:
Query Match
Best Local Similarity
Matches 292; Conserv
                                                                                                                                                                                              TELEPHONE: 206 628-76
TELEFAX: 206 628-7699
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/09/630,155
FILING DATE: 16-Jan-2001
CLASSIFICATION: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: Davison, Barry L.
REGISTRATION NUMBER: 47,309
REFERENCE/DOCKET NUMBER: 49321-10
                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: PC compatible
OPERATING SYSTEM: Windows95
SOFTWARE: Word
                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: DAVIS WRIGHT TREMAINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Doherty, Joni Kristin and Gail M. TITLE OF INVENTION: HER-2 BINDING ANTAGONISTS
                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: Washington COUNTRY: U.S.A. ZIP: 98101
                                                                                                                                                            TYPE: amino acid
                                                                                                                                           STRANDEDNESS: single
                                                                                                                                                                             LENGTH: 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1501
                  100.0%;
                                     42.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fourth Avenue,
                                                                                                                                                                                                                                                      628-7621
 0,
                  Score 292; pred. No.
 Mismatches
                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MAINE LLP
2600 Century Square
                    2e-269
                                     DB 4;
 0
                                 Length 419;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clinton
 Indels
```

Gaps

0

```
В
                              á
                                                               밁
                                                                                       Ş
                                                                                                                                                                                  US-09-146-283-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-146-283-4
                                                                                                                       Matches
                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4,
Patent No.
                                                                                                                                                                                                                                                                                                                                 TELEFAX: 650-324-0960
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Laus, Rein
APPLICANT: Ruegg, Cur
APPLICANT: Wu, Hongyu
TITLE OF INVENTION: I
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
REGISTRACION NUMBER: 42,702
REFERENCE/DOCKET NUMBER: 7636-0010.21
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-324-0880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                           ORIGINAL SOURCE:
                                                                                                                                                                                                                                           MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 782 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   158
                                                        79
                                98
                                                                                                                                        Local
                                                                                                                                                                                  ORGANISM: homo sapiens
INDIVIDUAL ISOLATE: GM-CSF-Her-2 fusion protein; Fig.
                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/09, FILING DATE: 03-SEPT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               79
EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              h 42.3%; Score 292; DB 2; Li
Similarity 100.0%; Pred. No. 3.5e-269;
92; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09146283 5976546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3: Dehlinger & Associates
350 Cambridge Ave. Suite 250
                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Laus, Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hongyu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Curtis L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Immunostimulatory Compositions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/09/146,283
                                                                                                                                                Length 782;
                                                                                                                       Indels
                                                                                                                      0
                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                                                                                                      0
```

```
INDIVIDUAL ISOLATE: GM-
US-08-579-823A-4
밁
                      Qy
                                                        뮹
                                                                                Ş
                                                                                                                 밁
                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-579-823A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                           Matches
                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4, Application US/08579823A Patent No. 6080409
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release CURRENT APPLICATION DATA:
APPLICATION UNMBER: US/08/
FILING DATE: 03-DEC-1998
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
REGISTRATION NUMBER: 42,70
                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 650-324-0960 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                            HYPOTHETICAL: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                           MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 76
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 782 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Wu, Hongyu
139
                           158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158
                                                         79
                                                                                    98
                                                                                                                 19
                                                                                                                                                                                                                                                                                                                             LENGTH: 782 amino acids
TYPE: amino acid
TOPOTIOCY:
                                                                                                                                             38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                    EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                         tch 42.3%; Score 292; DB 3; Ion 10.0%; Pred. No. 3.5e-269; 292; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       350 Cambridge Ave. Suite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ruegg, Curtis L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Laus, Reiner
                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                             650-324-0880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Immunostimulatory Composition
                                                                                                                                                                                                                                                 GM-CSF-Her-2 fusion protein; Fig.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/579,823A
                                                                                                                                                                                                                                                                                                                                                                                                                                                     42,702
                                                                                                                                                                                                                                                                                                                                                                                                                                          7636-0010
                                                                                                                                                                                                     Length 782
                                                                                                                                                                           Indels .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             310
                                                                                                                                                                         0;
                                                                                                                                                                        Gaps
198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217
```

```
밁
                                                                Ş
                                                                                                       밁
Ş
                                                                                                                                        ð
                                                                                                                                                                                                                                                   ; SEQUENCE DESCRIPTION: SEQ ID NO: US-09-344-195-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-344-195-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4, Application Patent No. 6210662
GENERAL INFORMATION:
                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                               Matches 292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                     86
                                                                                                         19
                                                                                                                          38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                     79
                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
REGISTRATION NUMBER: 42,702
REFERENCE/DOCKET NUMBER: 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
STREET: 350 Cambridge Ave. Suite 250
                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein HYPOTHETICAL: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wu, Hongyu
TITLE OF INVENTION: Immunostimulatory Compositions
NUMBER OF SEQUENCES: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-324-0880
TELEFAX: 650-324-0960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: Flopp
                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Laus, Reiner
                                                    EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                       GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL9TDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                   EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                  ORGANISM: homo sapiens
INDIVIDUAL ISCLATE: GM-CSF-Her-2
INDIVIDUAL ISCLATE: GM-CSF-Her-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/09/344,195 FILING DATE: 24-Jun-1999 CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09344195
                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/09/146,283 FILING DATE: 03-SEPT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION DATA:
                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ruegg, Curtis L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                              42.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  oppy disk
                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                Score 292; L
Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7636-0010.21
                                                                                                                                                                                                                   DB 4;
                                                                                                                                                                                              .5e-269;
                                                                                                                                                                                                                                                                                       fusion
                                                                                                                                                                             0;
                                                                                                                                                                                                              Length 782;
                                                                                                                                                                                                                                                                                     protein;
                                                                                                                                                                             Indels
                                                                                                                                                                             Gaps
                                     138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              258
                                                                                                       78
 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                277
                                                                                                                                                                             0
```

```
Q
                                                                                            Вþ
                                                                                                                        Ş
                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                     US-08-467-083-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-467-083-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence b
                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                 TELEX: 3723836 SEEDANBERRY INFORMATION FOR SEQ ID NO: 68:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 92
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Disis, mary L. TITLE OF INVENTION: IMMUN TITLE OF INVENTION: FOR D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: Seattle
                                 139
                                               158 ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   139 ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 198
                                                                                            79
                                                                                                                           86
                                                                                                                                                         19
                                                                                                                                                                        38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 0 FILING DATE: 06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM:
SOFTWARE: Patentl
                                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                            EVQGYVLIAHNQVRQVPLQRLRIVRGTQLEEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                         GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                               ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                      292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION:
                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98104-7092
                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application US/08467083
                                                                                                                                                                                                                                                                                                                                 1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                (206)
                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PatentIn
                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                 (206)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seed and Berry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Richard
                                                                                                                                                                                                                                                                                                                                                                                                  682-6031
                                                                                                                                                                                                                                                                                                                                                                                                               622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FOR DIAGNOSIS AND TREATMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HER-2/NEU ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IMMUNE REACTIVITY TO HER-2/NEU PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US 08/414,417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/467,083
                                                                                                                                                                                                                                                                                                                                                                                                                                                          32,629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G
                                                                                                                                                                                                                                     Score 292; I
; Pred. No. 5.
                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                920010.448C2
                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                       5e-269;
                                                                                                                                                                                                                                                 Length 1255;
                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                    Gaps
 277
                                 198
                                                             217
                                                                                                                                                           78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      277
                                                                                                                                                                                                                      0
```

```
Ş
                                                                                                                                    8
                                                                                                                                                                 S
 밁
                             Š
                                                                  밁
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 6
US-08-414-417B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                       US-08-414-417B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 68
Patent No.
                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (206) 682-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: FC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32,629
REFERENCE, DOCKET NUMBER: 92:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Cheever
                                                                   199
                                                                                                                                      139
                                                                                                                                                                     158
                                                                                                                                                                                                      79
                                                                                                                                                                                                                                     98
                                                                                                                                                                                                                                                                      19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 31-MAR-1995
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                    38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                        Local
NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                              CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 277
                                                                                                                                                  ELQLRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                    EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                               NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                               ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                   GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                 EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                     292;
                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8, Application US/08414417B 5801005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Seed and Berry LLP 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (206)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6) 022
0 682-6031
NO: 68:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HER-2/neu ONCOGENE IS ASSOCIATED 69
                                                                                                                                                                                                                                                                                                                                                     42.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IMMUNE REACTIVITY TO HER-2/neu PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/08/414,417B
                                                                                                                                                                                                                                                                                                                                                     Score 292; [
Pred. No. 5
                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        920010.448C2
                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                     .5e-269;
                                                                                                                                                                                                                                                                                                                                                                   Length 1255;
                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IN WHICH
                                                                                                                                  198
                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THE
```

ŋ

```
...ογ
                                                                                                                                           밁
                               9
                                                                    밁
                                                                                                  Ş
                                                                                                                                                                                                                                                                                    ; MOLECULE TYPE: US-08-484-438-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-484-438-8
                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 292; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No. Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/323,442
FILING DATE: 14-CCT-1994
APPLICATION.NUMBER: US 08/150,704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: HER4 HUMAN RECEPTOR TYROSINE KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
 139
                                                                      79
                                                                                                       98
                                                                                                                                           19
                                                                                                                                                           38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 10
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Misrock, S. Leslie REGISTRATION NUMBER: 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 0 FILING DATE: 24-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/0 FILING DATE: 07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET:
                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                         EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                 ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                         GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                    EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5811098 5780031
                                                                                                                                                                                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/08484438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New York
                                                                                                                                                                                                                                                                                                                                                                         1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plowman, Gregory D.
Culouscou, Jean-Michel
Shoyab, Mohammed
Siegall, Clay B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hellstr m, Ingegerd
Hellstr m, Karl E.
                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                       unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10-NOV-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                 PENNIE
                                                                                                                                                                                                                                                                                                                                          unknown
                                                                                                                                                                                                            42.3%; Score 292; DB 2; L
100.0%; Pred. No. 5.5e-269;
/ative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/484,438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07/981,165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5624-230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Version #1.25
                                                                                                                                                                                                                                               Length 1255;
                                                                                                                                                                                                               Indels
                                                                                                                                                                                                               0
                                                                                                                                                                                                              Gaps
                                   217
                                                                    138
                                                                                                                                           78
                                                                                                                                                                              97
198
```

당

ş

```
Ş
                                                                                                       밁
                                                                                                                                 Ş
                                                                                                                                                              밁
                                                                                                                                                                                       Ş
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-486-348A-68
                                                                                                                                                                                                                                                                                                                                           US-08-486-348A-68
                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 292; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNT...
ZIP: 98104-'U>*
COMPUTER READABLE FORM:
COMPUTER: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 68,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (206) 682-6031
NFORMATION FOR SEQ ID NO: 68:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFTC: 07-JUN-102
                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Cheever, Marti
APPLICANT: Disis, Mary L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259
                  278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            218
                                                                                                                                                                 79
                                                                                                                                                                                             98
                                                                                                                                                                                                                      TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 920010.448C6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                           ELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                               EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                              EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                     ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seattle
                                                                                                                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Seed and Berry LLP 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/08486348A
                                                                                                                                                                                                                                                                                                                                                                                     1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cheever, Martin A.
                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                             42.3%; Score 292; D
100.0%; Pred. No. 5.
tive 0; Mismatches
                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                701 Fifth Avenue
                                                                                                                                                                                                                                                                                                .5e-269;
                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                            Length 1255;
                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Z
                                                                                                                                                              138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               258
                                                                                                                                                                                                                         78
                                                                                                                                                                                                                                                     97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WHICH THE
                                                                                                                                                                                                                                                                                  0
                                                                                      Ş
                                                                                                                     멍
                                                                                                                                               ş
                                                                                                                                                                            밁
                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
RESULT 10
US-08-468-545B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259 NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
```

S

```
US-08-625-101-2
                                                                                                                                                                                                                                                                                                                                                                   US-08-625-101-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                      Matches 292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (206) 682-603
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: OF TITLE OF INVENTION: OF TITLE OF INVENTION: OF TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 98104-7092
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION: TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: CTTY: Seattle
259
                            278
                                                          199
                                                                                       218
                                                                                                                     139
                                                                                                                                                  158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 920
                                                                                                                                                                                                                                          APPLICATION NUMBER: US/0 FILING DATE: 01-APR-1996 CLASSIFICATION: 424
                                                                                                                                                                                79
                                                                                                                                                                                                             98
                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                               TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Sharkey, Richard REGISTRATION NUMBER: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                  NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                           NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                          CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                          CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                               EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2, Application US/08625101
                                                                                                                                                                                                                                                                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sharkey,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Washington
                                                                                                                                                                                                                                                                                                                                                                                                                            1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disis, Mary L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cheever,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEED and BERRY LLP
                                                                                                                                                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          682-6031
                                                                                                                                                                                                                                                                                                42.3%; but
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPOUNDS FOR ELICITING OR ENHANCING IMMUNE REACTIVITY TO HER-2/Neu PROTEIN FOR PREVENTION OR TREATMENT OF MALIGNANCIES IN WHICH THE HER-2/Neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/08/625,101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ი
                                                                                                                                                                                                                                                                                                                Score 292; DB 2; L; Pred. No. 5.5e-269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     920010.448C7
                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                 Length 1255;
                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                      Gaps
                                                                                     277
                                                                                                                     198
                                                                                                                                                  217
                                                                                                                                                                                138
                                                                                                                                                                                                                                           78
                                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                                      <u>..</u>
```

```
US-08-356-786-2
                                                                                                                                                                                                                 δ
                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-468-545B-68
                                                             Sequence 2, Application US/08356786 Patent No. 5877305 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 6
Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 66
SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
               APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 92
TELECOMMUNICATION INFORMATION
TELEPHONE: (206),622,4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                             139
                                                                                                                                                                                                                                                                                                                                                             158
                                                                                                                                                                                                                                                                                                                                                                                              79
                                                                                                                                                                                                                                                                                                                                                                                                                              86
                                                                                                                                                                                                                                                                                                                                                                                                                                                              19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: FILING DATE: 06-JUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                         ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                              EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                       GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 78
                                                                                                                                                                                     NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                       NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                          CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 277
                                                                                                                                                                                                                                                                                                                          ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                           EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , Application US/08468545B 5876712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sharkey, Richard G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Washington
Huston, James S.
Oppermann, Hermann
Houston, L. L.
Ring, David B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6300 Columbia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disis, Mary L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seed and Berry LLP
100 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6) 02-6031
1 682-6031
NO: 68:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42.3%; Score 292; DB 2; I
100.0%; Pred. No. 5.5e-269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08/468,545B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     920010.448C5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N
                                                                                                                                                                                                                                                                                                                          198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WHICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THE
```

US-08-466-680B-68

Sequence 68, Application US/08466680B Patent No. 6075122 GENERAL INFORMATION:

APPLICANT: Cheever, Martin A.
APPLICANT: Disis, Mary L.
TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
NUMBER OF SEQUENCES: 69

Ï

WHICH THE

```
밁
                          S
                                                          В
                                                                                    δÃ
                                                                                                                     ₽
                                                                                                                                                Ş
                                                                                                                                                                                 ₽
                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                US-08-356-786-2
                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (617) 248-71 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
ADDRESSEE: Edmund R. Pitcher, Testa, Hurwitz,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (617) 248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 06-FEB-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA: APPLICATION NUMBER: US
259
                                                            199
                                                                                                                      139
                                                                                        218
                                                                                                                                                   158
                                                                                                                                                                                 79
                                                                                                                                                                                                            98
                                                                                                                                                                                                                                          19
                                                                                                                                                                                                                                                          38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Pitcher, Edmund R. REGISTRATION NUMBER: 27, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                           EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
               NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                        CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                     ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                          GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 78
                                                          CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                     ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                 EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02109
                                                                                                                                                                                                                                                                                                                                                                            TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Exchange Place,
                                                                                                                                                                                                                                                                                                                                                                                                                          1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PatentIn Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-FEB-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        248-7100
                                                                                                                                                                                                                                                                                                                  42.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Biosynthetic Binding Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               07/831,967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/356,786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27,829
                                                                                                                                                                                                                                                                                                     <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRP-053
                                                                                                                                                                                                                                                                                                                   Score 292; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            State Street
                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                   .5e-269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #1.25
                                                                                                                                                                                                                                                                                                                                Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          & Thibeault
                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for Cancer
                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                  Gaps,
                                                                                                                                              217
                                                                                                                                                                                138
                                                                                                                     198
```

CORRESPONDENCE ADDRESS:

ADDRESSEE:

Seed and Berry LLP

```
õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-466-680B-68
                                                                                                                                                                                                                                                      JS-08-422-108-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                    Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (206) 682-6031
[INFORMATION FOR SEQ ID NO: 0
SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
                                                                                                                                                                                                        ENERAL INFORMATION:
                                                                                                                                                                                                                     tent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech,
                                                                                                                      TITLE OF INVENTION:
                                                                                                                                                        APPLICANT:
                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                     259
                                                                                                                                                                                                                                                                                                                                                                                                                 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                139
OMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                          STREET: 460 Point San Bruno Blvd
CITY: South San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Sharkey, Richard REGISTRATION NUMBER: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: FILING DATE: 06-JUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 78
                COUNTRY: C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                 CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ELQLRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                  CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       292;
                                                                                                                                                                                                                       , Application US/08422108 6015567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1255 amino acids
                                                                                                                                                     Shepard,
Ullrich,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                    Hudziak, Robert M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OMBER: US/08/466,680B
06-JUN-1995
                                                                                                                                          HER2 EXTRACELLULAR DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42.3%; Score 292; I
100.0%; Pred. No.. 5.
tive 0; Mismatches
                                                                                                                                                        Axel
                                                                                                                                                                       H. Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32,629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68:
                                                                                          Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>ဂ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              920010.448C4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .5e-269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

RESULT 14 US-08-422-734-1

Sequence 1, Application US/08422734 Patent No. 6333169

GENERAL INFORMATION:

APPLICANT:

Hudziak,

Robert M.

APPLICANT: TITLE OF

Shepard, H. Michael Ullrich, Axel

NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:

INVENTION: HER2 EXTRACELLULAR DOMAIN

ADDRESSEE:

SEE: Genentech, Inc. : 460 Point San Bruno Blvd South San Francisco

CITY: STREET:

California

```
g
                                                                                           Ş
                                                                                                                             В
                                                                                                                                                           Š
                                                                                                                                                                                             B
                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                         US-08-422-108-1
                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: WinPatin (Ge CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 624 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 19-MAY-1989
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 13-DEC-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
241
                              281
                                                              181
                                                                                              221
                                                                                                                               121
                                                                                                                                                               161
                                                                                                                                                                                                                            101
                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: Amino Acid
                                                                                                                                                                                                                                                                                           41 STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 15-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE: 14-Apr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                            \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE:
                                                                                                                                                                                                             GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 160
GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                              GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                               SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                              LRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                             GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                            SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                               LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lee, Wendy M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          910/371-7168
                                                                                                                                                                                                                                                                                                                                                                                                                                       624 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      415/952-9881
                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-DEC-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-Apr-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19-MAY-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.5 inch, 1.44 Mb floppy
                                                                                                                                                                                                                                                                                                                                          41.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Genentech)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08/355460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07/354319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/422,108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08/048346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     00,000
                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                          Score 289;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       554C2D2
                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                            2e-266;
                                                                                                                                                                                                                                                                                                                                                             DB 3;
                                                                                                                                                                                                                                                                                                                                                        Length 624;
                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                           Gaps
```

60 100

0

120

220

280 180

SOFTWARE: WinPatin (Ge CURRENT APPLICATION DATA:

IBM PC compatible SYSTEM: PC-DOS/MS-DOS WinPatin (Genentech)

OPERATING SYSTEM:

COMPUTER READAL MEDIUM TYPE:

TYPE: 3.5 inc

inch, 1.44 Mb floppy disk

```
S
                                                                                                                                                                                                                                                                                                                  ᄝ
                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                         US-08-414-417B-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-422-734-1
                                                                                                                     Sequence 69, Application US/08414417B Patent No. 5801005 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX: 910/371-7168
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION DATA:
PRIOR APPLICATION NUMBER: 08/422108
APPLICATION NUMBER: 14-Apr-1995
FILING DATE: 14-Apr-1995
FILING TANK NIMBER: 08/355460
                                  TITLE OF INVENTION:
TITLE OF INVENTION:
CORRESPONDENCE ADDRESS:
                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
TELEPHONE: 415/225-1994
TELEFAX: 415/952-9881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 19-MAY-1989
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/3: FILING DATE: 13-DEC-1994 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                281 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                    221
                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                       161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: Amino Acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER: 00,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 08/0/
FILING DATE: 15-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                     LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 160
                                                                                                                                                                                                                                            GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                   LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lee, Wendy
                                                                                  Cheever, Martin A.
Disis, Mary L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41.9%;
                              IMMUNE REACTIVITY TO HER-2/neu PROTEIN
FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08/048346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07/354319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/422,734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 289; DB q; pred. No. 2e-266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      554C2D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 624;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                              289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                 280
                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

Search completed: April 28, 2003, 13:46:38 Job time : 19 secs

```
Š
                                                                                                                                 밁
                                                                                                                                                             5
 밁
                               S
                                                               밁
                                                                                                                                                                                                                                                                 US-08-414-417B-69
                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                 Matches 132;
                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (206) 682-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 92
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 98104-7092
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION: NAME: Sharkey, Richard G.
 483
                                  450
                                                                 423
                                                                                                                                               330 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLCMGAAKG 389
                                                                                               390 LOSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 449
                                                                                                                                 363 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
STREET: 63
                                                                                                                                                                                                                                                                                                TYPE: amino
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE: 31-MA
                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Seattle
                                                                                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
PAARPAGATLER 461
                                                                 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 482
                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: Seed and Berry LLP 6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                 580 amino acids
                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                   (206)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                  682-6031
                                                                                                                                                                                                                 19.1%; Score 132; DB 1; L
100.0%; Pred. No. 4.1e-117;
                                                                                                                                                                                                                                                                                                                                                                                               622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/414,417B
                                                                                                                                                                                                                                                                                                                                                                    69:
                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                  920010.448C2
                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                Length 580
                                                                                                                                                                                                 Indels
                                                                                                                                                                                               0;
                                                                                                                                                                                               Gaps
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to I score greater than or equal to the score of the result being and is derived by analysis of the total score distribution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 0
length: 2000000000
                                                                                                                                                                                                                                                                    Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-821-883-2
690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OLIGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         April 28, 2003, 13:44:40 ; Search time 22 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301932 seqs, 80129803 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapop 60.0 , Gapext 60.0
    Published_Applications_AA:*
1: /cgn2_6/ptcdata/1/pubpaa/US08_NEW_PUB.pep:*
2: /cgn2_6/ptcdata/1/pubpaa/PCT_NEW_PUB.pep:*
3: /cgn2_6/ptcdata/1/pubpaa/US06_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                   /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MRAAPLLLARAASLSLGFLF.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                        /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep
                                                                                                                                                                                                                                                                       Length
    697
645
653
712
    001
001
001
001
001
001
001
 0 US-09-821-883-4
0 US-09-821-161-1
0 US-09-854-356-3
US-09-854-356-7
US-09-854-356-6
US-09-854-356-1
US-09-854-356-1
US-09-811-125-2
US-09-811-115-3
0 US-09-821-883-23
0 US-09-821-883-23
0 US-09-821-883-23
0 US-09-821-883-23
                                                                                                                                                                                                               US-09-821-883-2
US-09-821-883-1
US-09-821-883-5
                                                                                                                                                                                                                                                                       Ħ
                                                                                                                                                                                                     US-09-821-883-3
                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (without alignments)
2513.162 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EPVQEGAPPPPAAAHHHHH
                                                                                                                                                                                                                                                                                                                                              by chance to have a the result being printed,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301932
                                                                                                                                                                                                                                                                    Description
                                                                 Sequence 3
Sequence 6
Sequence 2
Sequence 1
Sequence 2
Sequence 5
Sequence 6
Sequence 6
                Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                           Sequence
                                                                                                                                                                                        Sequence
                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                           Sequence
Sequence
                                                                                 oδ
  29,75

    Appli

                                                                                                                                                                                      4, Appl
                                                                                                       Appli
Appli
Appli
Appli
Appli
                                                                                 Appli
                                                       Appli
Appli
                                                                                                                                                                                                 Appli
Appli
Appli
Appli
Appli
```

	45	44	ü	2	11	0	39	38	37	36	35	34	3	2	Ω	30	29	28	27	8	25	24	23	22	21	20
	18	18	22	22	32	35	35	35	. 35	44	46	52	52	52	117	127	127	127	127	127	132	132	132	132	132	173
	2.6	2.6	ω	3. 2	4.6	5.1	5.1	5.1	5.1	6.4	6.7	7.5	7.5	7.5	17.0	18.4	18.4	18.4	18.4	18.4	19.1	19.1	19.1	19.1	19.1	25.1
	65	19	83	22	32	386	386	386	171	1256	293	1260	1256	654	135	610	144	127	127	127	600	589	587	583	266	191
	10	10	10	10	10	10	9	9	10	9	9	9	9	9	10	10	10	10	10	9	9	ø	ø	ø	Ø	9
	US-09-466-320-12	US-09-466-320-20	US-09-466-320-11	US-09-466-320-19	US-09-821-883-11	US-09-822-827-945	US-09-974-546-48	US-09-895-793-945	US-09-925-300-1025	US-09-854-356-14	US-10-102-806-583	US-09-870-759-118	US-09-854-356-2	US-09-854-356-8	US-09-925-301-1232	US-09-783-708-1	US-09-923-246-114	US-09-800-016-1	US-09-821-883-18	US-09-792-793A-15	US-09-930-125-11	US-09-930-125-10	US-09-930-125-8	-930-125	US-09-854-356-4	US-09-441-411-9
-	12,	Sequence 20, Appl	•	Sequence 19, Appl	`	Sequence 945, App	Sequence 48, Appl	Sequence 945, App	Sequence 1025, Ap	Sequence 14, Appl	Sequence 583, App	Sequence 118, App	Sequence 2, Appli	Sequence 8, Appl1	Sequence 1232, Ap	Sequence 1, Appli	Sequence 114, App	Sequence 1, Appli.	s Sequence 18, Appl	Sequence 15, Appl:	Sequence 11, Appl	Sequence 10, Appl	Sequence 8, Appl1:	Sequence 9, Appli	Sequence 4, Appli	Sequence 9, Appli

# ALIGNMENTS

```
ДЬ
                                                                                                                                                                                                                                                                                     ; FEATURE:
; OTHER INFORMATION: HER500-hgm-CSF construct
US-09-821-883-2
Ş
                                 밁
                                                          δÃ
                                                                                                                           Š
                                                                                                                                                          Вb
                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-821-883-2
                                                                                                                                                                                                                         Matches 690;
                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 2
LENGTH: 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Vidovic, Damir
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
CURRENT FILING DATE: 2001-03-30
                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
                                                                                                                                                                                                                                                                                                                          TYPE: PRT
ORGANISM: Artificial Sequence
 181
                                 121
                                                               121
                                                                                              61
                                                                                                                            61
                                                                                                                                                                           1 MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET 60
                             HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI
CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                              HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI
                                                                                                                                                            MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                     100.08;
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                        Score 690; D
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                      Length 690;
                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                        Gaps
 240
                                                               180
                                                                                              120
                                                                                                                            120
                                  180
                                                                                                                                                            60
                                                                                                                                                                                                                         0
```

```
S
                                              В
                                                                ş
   밁
                                                                                                                                                                                                                                                                                                                                                                                              RESULT 2
US-09-821-883-1
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                          US-09-821-883-1
                                                                                            Query Match
Best Local S
Matches 549
                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                         APPLICANT: Laus, Reiner
APPLICANT: .Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                          PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows
SEQ ID NO. 1
                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
                                                                                                                                                   LENGTH: 555
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: HER500 construct
                                                                                             : Local Sinhes 549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
   61
                          61
                                             MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE 360
                                                                                                                                                                                                                                                                                                                                                                                                                                         FLLVIPFDCWEPVQEGAPPPPAAAHHHHHH 690
FLLVIPFDCWEPVQEGAPPPPAAAHHHHHH 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKD 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGLDVPAAAPARSPSPSTQPWEHVNAIQEARRILINLSRDTAAEMNETVEVISEMFDLQEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APLTCSPOPEYVNOPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LGLDVPAAAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                  555
                                                                                                      Similarity
                                                                                             Conservative
                                                                                                                                                                                                                       for Windows Version 4.0
                                                                                                      79.6%; Score 549; 100.0%; Pred. No. (
                                                                                             0
                                                                                            Mismatches
                                                                                                                  멂
                                                                                                                                                                                                                                                                                                                  for
                                                                                                                  10;
                                                                                            0
                                                                                            Indels
                                                                                          0;
                                                                                          Gaps
                                              60
                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                          0
```

```
Qy
                                               밁
                                                                 Ş
                                                                                                ₽
                                                                                                                    Qγ
밁
                                                                                                                                                                                                ; OTHER INFORMATION: HER300*-rGM-CSF construct US-09-821-883-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-821-883-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÔ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 5.
                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Vidovic, Thomas
TITLE OF INVENTION: Compositions and Methods
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 5, Application US Patent No. US20020061310A1
                                                                                                                                                 Matches
                                                                                                                                                                                                                        LENGTH: 479
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
 121
                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                 Local Sin
                                                 12
                                                                        61
                                              HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI 120
                                                                                               MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LGLDVPAAA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLG;EPSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV
                                                                                                                                                            Similarity
                                                                                                                                               47.7%; Score 329; DB 10; llarity 100.0%; Pred. No. 4.1e-267; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           549
                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/09821883
                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                       Dendritic
                                                                                                                                                                       Length 479,
                                                                                                                                                 Indels
                                                                                                                                                0,
                                                                                                                                                Gaps
                       180
                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . .
                                                                                                                                                0
```

```
RESULT 5
US-09-821-883-4
Sequence 4, Application US/09821883
; Patent No. US20020061310A1
                                                                          ₽
                                                                                               Ş
                                                                                                                              밁
                                                                                                                                                  Ş
                                                                                                                                                                                  밁
                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
US-09-821-883-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-821-883-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 3, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Laus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 564
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION: HER500* construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                             301
                                                                                                     301
                                                                                                                                                         241
                                                                                                                                                                                   181
                                                                                                                                                                                                             181
                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                 241
                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                           ш
                                                                                                                                                                                                                                                                                                                                                                  1 MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                             GCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                         MPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                               CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                   CYODTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                               VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNDQL 180
                                                                                                                                                                                                                                                                                     MPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                               GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                    VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                            329;
                                                                                                                                                                                                                                                                                                                                                                                                        h 47.7%; Score 329; DB 10; 1 Similarity 100.0%; Pred. No. 4.8e-267;
                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Reiner
                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                   Length 564;
                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                         300
                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                               300
                                                                                                                                                                                   240
                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                            0,
```

```
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
SOFTMARE: FastSEQ for Windows Version 4.0
SEQ ID NO 4
LENGTH: 697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   dd.
                                                             ; LENGTH: 645
; TYPE: PRT
; ORGANISM: Homo s
US-09-921-161-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; OTHER INFORMATION: HER500*-rGM-CSF construct US-09-821-883-4
                                                                                                                                                                                                                                                                                                                           US-09-921-161-1
                                                                                                                       CURRENT APPLICATION NUMBER: US/09/921,161
CURRENT FILING DATE: 2001-08-01
PRIOR APPLICATION NUMBER: 60/225,433
PRIOR FILING DATE: 2000-08-15
NUMBER OF SEQ ID NOS: 1
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 1
                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
Query Match
Best Local Similarity
Matches 292; Conserv
                                                                                                                                                                                                                                                                                            Sequence 1, Application US/09921161 Patent No. US20020090662A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 47.7%;
Best Local Similarity 100.0%;
Matches 329; Conservative (
                                                                                                                                                                                                                                 APPLICANT: Ralph, Peter
TITLE OF INVENTION: ANALYTICAL METHOD
FILE REFERENCE: GENENT.066A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MRAAPLILARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                        MPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Laus, Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vidovic, Damir
Graddis, Thomas
    Conservative
                                                                           sapiens
                 42.3%;
100.0%;
 Score 292; DB 10;
; Pred. No. 4.7e-236;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 329; DB 10; Pred. No. 5.7e-267;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                Length
    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                 645;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
   0
   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
Ş
                                                                                                   Š
                                                                                                                                       망
                                                                                                                                                                        Ş
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                               В
                              õ
                                                                    밁
   밁
                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHER INFORMATION: extracellular domain (ECD) of human HER-2/neu US-09-854-356-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-854-356-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3, Application US/09854356 Patent No. US20020177567A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 09/493,480 PRIOR FILING DAYE: 2000-01-28 PRIOR APPLICATION NUMBER: US 60/117,976 PRIOR FILING DAYE: 1999-01-29 NUMBER OF SEQ ID NOS: 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Corixa Corporation
APPLICANT: SmithKline Beecham Biologicals S.
TITLE OF INVENTION: HER-2/new Fusion Proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Cheever, Martin A. APPLICANT: Gheysen, Dirk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: 014058-009810PC CURRENT APPLICATION NUMBER: US/09/854,356 CURRENT FILING DATE: 2001-05-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin
EQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 653
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                       139
                                  278
                                                                                                       218
                                                                                                                                                                            158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                    199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       218
                                                                                                                                                                                                            79
                                                                                                                                                                                                                                               98
                                                                                                                                                                                                                                                                                 19
                                                                                                                                                                                                                                                                                                                   38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38
                NHSGICELHCPALYTYNTDTFESMPNPEGRYTFGASCYTACPYNYLSTDYGS 329
                                                                                      CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                        ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                         EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                               GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                     ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                           GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                          EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 198
                                                                                                                                                                                                                                                                                                                                                  42.3%; Score 292; DB 9; L ilarity 100.0%; Pred. No. 4.8e-236; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P
                                                                                                                                                                                                                                                                                                                                                                               Length 653;
310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                     198
                                                                                                                                                                                                          138
                                                                                                                                                                                                                                                                             78
                                                                                                                                                                                                                                                                                                                                                  0
```

)

SOFTWARE:

NUMBER OF SEQ ID NOS: 26

PatentIn Ver.

```
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: Description of Artificial Sequence:fusion protein; OTHER INFORMATION: of ECD and delta PD of human HER-2/neu US-09-854-356-7
                                                                                                                                                                                                                                                                                                                              US-09-854-356-6
                                                                                                                                                                                                                                                                                                                                                                                                                    몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
US-09-854-356-7
                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                 Sequence 6, Application US/09854356 Patent No. US20020177567A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity Matches 292; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Ver. 2.1 SEQ ID NO 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No. US20020177567A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/09/854,356
CURRENT FILING DATE: 2001-05-09
PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR FILING DATE: 2000-01-28
PRIOR APPLICATION NUMBER: US 60/117,976
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 26
PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR FILING DATE: 2000-01-28
PRIOR APPLICATION NUMBER: US 60/117,976
PRIOR FILING DATE: 1999-01-29
                                                                               CURRENT APPLICATION NUMBER: US/09/854,356
CURRENT FILING DATE: 2001-05-09
                                                                                                                                              APPLICANT: Gheysen, Dirk
APPLICANT: Corixa Corporation
APPLICANT: SmithKine Beecham Biologicals S.
APPLICANT: SmithKine Beecham Broteins
                                                                                                                                                                       APPLICANT: Cheever, Martin A. APPLICANT: Gheysen, Dirk APPLICANT: Corixa Corporation APPLICANT: SmithKline Beechar
                                                                                                                              FILE REFERENCE: 014058-009810PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Gheysen, Dirk
APPLICANT: Corixa Corporation
APPLICANT: Smithkline Beecham Biologicals S.
TITLE OF INVENTION: HER-2/neu Fusion Proteins
FILE REFERENCE: 014058-009810PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Ch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                    259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
                                                                                                                                                                                                                                                                                                                                                                                                                                                            278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38
                                                                                                                                                                                                                                                                                                                                                                                                               NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCYTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELQLRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/09854356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 neever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42.3%; Score 292; DB 9; L
llarity 100.0%; Pred. No. 5.1e-236;
Conservative 0; Mismatches 0:
                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           198
```

ORGANISM: Artificial Sequence,

```
; SEQ ID NO 2
; LENGTH: 1255
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-769-508-2
                                                                                                 В
                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                밁
                                                          Š
                                                                                                                                                                 밁
                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:fusion
; OTHER INFORMATION: of ECD and PD of human HER-2/neu
US-09-854-356-6
õ
                                                                                                                                                                                                                               Query Match
Best Local Sim
Matches 292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 292; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/09769508 Patent No. US20020155527A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: STUART, SUSAN G.
APPLICANT: MONAHAN, JOHN J.
APPLICANT: LANGTON, BEATRICE CLAUDIA
APPLICANT: HANCOCK, MITANA E.C.
                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/769,508
CURRENT FILING DATE: 2001-01-26
NUMBER OF SEQ ID NOS: 2
SOFTMARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: BLUFORD, PETER
TITLE OF INVENTION: C-ERBB-2 EXTERNAL DOMAIN: GP75
FILE REFERENCE: BBBIO-111-C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      278 NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     199 CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        158
                                                                                             38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86
                                                                                                                                                                  19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 277
                                                                                                                                                               GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                               ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                 42.3%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LORRINE A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42.3%; Score 292; DB 9; 100.0%; Pred. No. 6.4e-23
                                                                                                                                                                                                                                               Score 292; DB 9; L; Pred. No. 8.4e-236;
                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.4e-236;
                                                                                                                                                                                                                                                            Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 919;
                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                               Gaps
                                198
                                                                                                                                                               78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78
                                                                                                                                                                                                97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                 0
```

```
Š
                                                                                                                                                                                                Q
                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                           Ъ
                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                             밁
                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 11
US-09-854-356-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 1
LENGTH: 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/09854356 Patent No. US20020177567A1
                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US 60/117,976
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/854,356
CURRENT FILING DATE: 2001-05-09
PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR FILING DATE: 2000-01-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Gheysen, Dirk
APPLICANT: Corixa Corporation
APPLICANT: SmithKline Beecham Biologicals S.
TITLE OF INVENTION: HER-2/neu Fusion Proteins
FILE REFERENCE: 014058-009810PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: DOMAIN
LOCATION: (990)..(1255)
OTHER INFORMATION: phosphorylation domain (PD)
NAME/KEY: DOMAIN
LOCATION: (990)..(1048)
OTHER INFORMATION: fragment of the phosphorylation domain, preferred.
OTHER INFORMATION: portion (delta PD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: DOMAIN
LOCATION: (676)..(1255)
OTHER INFORMATION: intracellular domain (ICD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: DOMAIN
LOCATION: (1)..(653)
OTHER INFORMATION: extracellular domain (ECD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION: human HER-2/neu protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
                                                                             199
                                                                                                                                                             139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
259
                                                                                                                    218
                                                                                                                                                                                 158 ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSKACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         259 NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                                             79
                                                                                                                                                                                                                                                                                    98
                                                                                                                                                                                                                                                                                                                                                 38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                           19 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 78
                                                                                            CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                             EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 138
                                                                                                                                                                                                                                                            EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                           CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                           ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                 42.3%; Score 292; I
100.0%; Pred. No. 8
                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 9; Le
8.4e-236;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                           198
```

. 0

```
RESULT 13
US-09-441-411-6
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TYPE: PRT
; ORGANISM: Homo
US-09-930-125-2
                                                     US-09-441-411-6
                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                            Sequence 6, Application US/09441411
Publication No. US20030008342A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2, Application US/09930125 Publication No. US20020193329A1 GENERAL INFORMATION:
 Query Match
Best Local Similarity
                                                                                                                         SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 292;
                                                                                                                                                                                                      APPLICANT: Disis, Mary L.
APPLICANT: Hellstrom, Ingegerd
APPLICANT: Hellstrom, Karl Erik
TITLE OF INVENTION: SURFACE RECEPTOR ANTIGEN VACCINES
FILE REFERENCE: 730033.409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: McNeill, Patricia D.
APPLICANT: Vedvick, Thomas S.
TITLE OF INVENTION: COMPOSITIONS AND METHDOS FOR THE THERAPY AND DIAGNOSIS TITLE OF INVENTION: OF HER-2/NEU-ASSOCIATED MALIGNANCIES
FILE REFERENCE: 210121.544
CURRENT APPLICATION NUMBER: US/09/930,125
CURRENT FILING DATE: 2001-08-14
NUMBER OF SEQ ID NOS: 25
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -09-930-125-2
                                                                                                                                                        CURRENT FILING DATE:
NUMBER OF SEQ ID NOS:
                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/441,411
                                                                                                                                                                                                                                                                            APPLICANT: Scholler, Nathalie B
APPLICANT: Disis, Mary L.
                                                                                                                                       SOFTWARE: FastSEO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Hand-Zimmerman, Susan APPLICANT: Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                   LENGTH: 1255
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          139
                                                                                                                                                                                                                                                                                                                                                                                                                                      259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNOLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                  NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ. 78
                                                                                                                                                                                                                                                                                                                                                                                                                                  NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kalos, Michael J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Foy, Teresa M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42.3%; Score 292; DB 9; L
llarity 100.0%; Pred. No. 8.4e-236;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapien
                                                                                                                                       for Windows Version 4.0
                                                                                                                                                        1999-11-16
26
 42.3%;
Score :
 . 292;
 8.4e-236;
                 DB 9;
              Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
; SOFTWARE: FastSEC
; SEQ ID NO 9
; LENGTH: 1255
; TYPE: PRT
; ORCANISM: Homo s
US-09-811-123-9
밁
                        õ
                                                             밁
                                                                                         Ş
                                                                                                                          밁
                                                                                                                                                      Ş
                                                                                                                                                                                         밁
                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                 QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-811-123-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: Sharon Erickson
APPLICANT: Ralph Schwall
APPLICANT: Mark Sliwkowski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 9, Application US/09811123 Patent No. US20020001587A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: METHODS OF TREATMENT USING ANTI-ErbB TITLE OF INVENTION: ANTIBODY-MAYTANSINOID CONJUGATES FILE REFERENCE: GENENT.073A2 CURRENT APPLICATION NUMBER: US/09/811,123 CURRENT FILING DATE: 2001-03-16 CURRENT FILING DATE: 2001-03-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: 09/602,530 PRIOR FILING DATE: 2000-06-23 NUMBER OF SEQ ID NOS: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: 60/238,327 PRIOR FILING DATE: 2000-10-05
                                                              199
                                                                                                                            139
259
                               278
                                                                                              218
                                                                                                                                                           158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              139
                                                                                                                                                                                           79
                                                                                                                                                                                                                       98
                                                                                                                                                                                                                                                        19
                                                                                                                                                                                                                                                                                      38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98
                                                                                                                                                                                                                                                                                                                     Local Similarity
les 292; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        38
                                                                                                                                                                                      GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 78
              NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                             CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 277
                                                                                                                                                                                                                                                                                    GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                              CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                           ELQLRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                            ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EVQGYYLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 sapiens
                                                                                                                                                                                                                                                                                                                                 42.3%; Score 292; DB 10;
100.0%; Pred. No. 8.4e-236;
                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>.</u>
```

Ĭ.

```
APPLICANT: Erickson, Sharon

APPLICANT: King, Kathleen

APPLICANT: King, Kathleen

TITLE OF INVENTION: HER-2 TRANSGENIC NON-HUMAN TUMOR MODEL

FILE REFERENCE: GENENT.034A

CURRENT APPLICATION NUMBER: US/09/811,115

CURRENT FILING DATE: 2001-03-16

PRIOR APPLICATION NUMBER: 60/189,844

PRIOR APPLICATION NUMBER: 60/189,844

PRIOR FILING DATE: 2000-03-16

NUMBER OF SEQ ID NOS: 4

SOFTWARE: FASTSEQ for Windows Version 4.0

SEQ ID NO 3

LENGTH: 1255

TYPE: PRT

ORGANISM: Homo sapiens
                                                                밁
                                                                                                                             밁
                                                                                                                                                        ş
                                                                                                                                                                                           밁
                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                              Ş
Search completed: April 28, 2003, 13:47:06 Job time: 24 secs
                                                                                                                                                                                                                                                                                                                                                                               Query Match 42.3%; Score 292; DB 10; I Best Local Similarity 100.0%; Pred. No. 8.4e-236; Matches 292; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application US/09811115 Patent No. US20020035736A1
                                                             218 CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 277
                                                                                                                                                                                       CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF 258
                                                                                                                                                                                                                                                                                                                                                                                                             Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
```

HIS PAGE BLANK (USPTO)

GenCore version 5.1.4\_p5\_4578 Copyright (c) 1993 - 2003 Compugen Ltd.

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-821-883-23
1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                908470 segs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           April 28, 2003, 13:37:08; Search time 23.1973 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A_Geneseq_101002:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STQVCTGTDMKLRLPASPET......FGASCVTACPYNYLSTDVGS 289
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa1992.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa1993.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa1993.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa1997.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa2000.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa2000.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/Aa2000.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1985.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'SIDS2/gcgdata/geneseq
                                                                                                                                                                                                                                                                                                                                              /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1990.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                       /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (without alignments)
1660.081 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       908470
```

score greater t and is derived Pred. No. is the number of results predicted by chance to later than or equal to the score of the result being rived by analysis of the total score distribution to have a being printed,

Result	Score	Query Match I	Length DB	BB	ID	Description
1	1587	100.0	289	22	AAE13120	Mature human HER-2
N	1587	100.0	479	22	AAE13112	Human HER300-rGM-C
ω	1587	100.0	555	22	AAE13108	Human HER500 fusio
4	1587	100.0	564	22	AAE13110	Human HER500 fusio
ۍ	1587	100.0	645	22	AAB60408	Human ErbB2 oncopr
σ	1587	100.0	645	22	AAB61593	Human ErbB2 extrac
7	1587	100.0	653	21	AAB21200	Extracellular HER-
8	1587	100.0	653	23	AAM51145	Human Her-2/neu on
9	1587	100.0	690	22	AAE13109	Human HER500-hGM-C
10	1587	100.0	697	22	AAE13111	Human HER500-rGM-C

4	4	4	4	. 4	4	w	w	w	36	w	ω	ω	ω	ω	ω	2	N	N	2	2	2	2	2	N	2	_	_	_	1	1	1	1	12	
5	4	ω	2	<u>, , , , , , , , , , , , , , , , , , , </u>	0	9	8	7	6	տ	4	w	2	_	0	9	8	7	σ	G.	4	ω	N	Н	0	9	æ	7	σ	Ç.	4	w	2	_
1536	1536	1536	1536	1536	1536	1536	1536	1536	1536	1536	1538	1552	1571	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587	1587
				•					96.8								•	•	100.0		•	•		•	•	•	•	•	•	•	•	•	•	100.0
419	419	419	419	419	419	419	419	419	419	419	419	624	1433	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1200	951	919	919	782	712	712
22	22	22	22	22	22	22	22	22	22	22	23	11	14	23	23	23	23	23	22	22	22	22	21	21	21	20	17	21	21	23	21	18	23	21
AAE09209	AAE09208	AAE09207	AAE09206	AAE09205	AAE09204	AAE09203	AAE09202	AAE09200	AAE09183	AAE09181	AAE20348	AAR08222	AAR39568	AAU74545	AAU77114	AAM51143	AAE20479	AAE24067	AAB60167	AAG88267	AAB85458	AAE12130	AAY92620	AAY84780	AAB21198	AAW92406	AAW01111	AAB21208	AAY44993	AAM51148	AAB21203	AAW19764	AAM51149	AAB21204
Human p68HER-2 gen	່ວ	2	p68HER-2	'n	ż	p68HER-2	N	N	'Humen p68HER-2 gen	N	Human truncated HE	Extracellular port	nce of	Human HER2 (ErbB2)	Human Her-2/neu po	Her-2/neu	Human Her-2∕neu pr	Numan Her-2 protei	HER2 transgene pla	HER2/neu amino aci		tyrosine k		acid seque	HER-2/neu	Human HER-2/neu on	-	Human HER-2/neu pr	DC8scFv-erbB2EC fu	neu extrac	Human HER-2/neu fu	Her2-GM-CSF immuno	/neu extrac	Human HER-2/neu fu

## RESULT 1 AAE13120

ALIGNMENTS

AAE13120 standard; Protein; 289 AA.

•

AAE13120;

28-JAN-2002 (first entry)

Mature human HER-2 membrane distal extracellular domain.

Immunostimulatory fusion protein; IFP; antigen component; therapy; immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; human; HER-2 membrane distal extracellular domain.

Homo sapiens.

11-OCT-2001.

WO200174855-A2

30-MAR-2001; 2001WO-US10515

30-MAR-2000; 2000US-193504P

(DEND-) DENDREON CORP.

Laus R, Vidovic D, Graddis Ŧ;

WPI; 2001-662965/76. N-PSDB; AAD21571.

An immunostimulatory fusion protein comprising the intracellular domain

```
RESULT 2
AAE13112
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                 Chimeric -
Chimeric -
Chimeric -
                                                                                                                                                                                                                immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; GM-CS HER-2 protein; granulocyte-macrophage colony stimulating factor; ovalbumin-derived octapeptide; OVA; rat; HER300-rGM-CSF fusion pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is mature human HER-2 membrane distal extracellular domain.

This sequence is used in the HER500 and HER300 GM-CSF fusion constructs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
is
                       30-MAR-2000;
                                                      30-MAR-2001;
                                                                                                                   WO200174855-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim
                                                                                                                                                                                                                                                                                                                                          Human HER300-rGM-CSF fusion construct comprising OVA-derived peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                            AAE13112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                            Immunostimulatory fusion protein; IFP; antigen component;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LRSLTEILKGGVLIQRNPOLCYODTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and an antigen elicits an immune response to the antigen I for the treatment of associated cancer associated -
                                                                                                                                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                                                                    Unidentified
                                                                                                                                                                  Rattus norvegicus
                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       289 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                       2000US-193504P
                                                      2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                            479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1587; DB 22; Pred. No. 7.8e-132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                         therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                               GM-CSF;
                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

Ş 밁 ş

Ş

밁

Ş

밁

Q

221 181 161 121 101 61

Q 망

밁

281

GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289

õ

LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG

LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG

SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS

SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS

GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ

GYYLIAHNQYRQYPLQRLRIYRGTQLFEDNYALAYLDNGDPLNNTTPYTGASPGGLRELQ

160

120

0

180

220

밁

밁 S

```
밁
                                                        Ş
                                                                                                                                                                                                                                                           Matches
                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                         The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER300 rGM-CSF fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 membrane distal extracellular domain, an Ala linker, a HER-2 membrane distal intracellular domain, a mature and linker, a HER-2 membrane distal intracellular domain, a mature pap more of the linker of the protein and an analysis and the protein construct which compared the protein and protein construct which are provided the protein construct which compared the protein construct which construct which compared the protein construct which construct which construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-PSDB;
                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (DEND-) DENDREON CORP
   41
                                                                  μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated - \,
                                                                                                                                                           ocal Similarity
                                                                                                                                                                                                                                                                                                                       granulocyte-macrophage colony stimulating
a C-terminal tag.
   STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                    STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001-662965/76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 27;
                                                                                                                                                                                                                                                           479 AA;
                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           59pp; English
                                                                                                                                                           100.0%;
                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H
                                                                                                                                                        Score 1587; DB 22;
Pred. No. 1.5e-131;
                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                        factor (GM-CSF) sequence
                                                                                                                             Indels
                                                                                                                                                                                      Length
                                                                                                                             0
                                                 60
   100
```

```
RESULT 3
AAE13108
Immunostimulatory fusion protein: IFP; antigen component; therapy; immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human;
                                                                                                                                                                                                   AAE13108 standard; Protein;
                                                                                                                                     (first entry)
                                                                                                        fusion
                                                                                                       protein
                                                                                                                                                                                                   555
                                                                                                                                                                                                   ⋧
```

```
RESULT 4
AAE13110
ID AAE1
XX
AC AAE1
XX
DT 28-J
XX
                                                                                                                                                                              В
                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              $\caps \caps \caps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chimeric - 1
Chimeric - 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acid molecules encoding such proteins. The IFPS comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC) induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of ∄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to immunostimulatory fusion proteins (IFP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 7; Page 26;
                    28-JAN-2002
                                                                                       AAE13110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Laus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (DEND-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200174855-A2
                                                                                                                                                                                                                                                   221
                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                        161
                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                              281
                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -
                                                                                                                                                                          GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                             GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                      LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                          GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DENDREON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vidovic D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; illarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001WO-US10515
                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59pp; English.
                                                                                       Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Graddis
                                                                                       564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1587; DB 22;
Pred. No. 1.8e-131;
; Mismatches 0;
                                                                                       ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                              289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                          160
                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                      220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                  밁
                                              δÃ
                                                                                   B
                                                                                                                   Š
                                                                                                                                                          ф
                                                                                                                                                                                         S
                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chimeric -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Laus
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HER-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (DEND-)
                                                                                                                                                            161
                                                                                                                                                                                                                                101
                  281
                                                    241
                                                                                       221
                                                                                                                        181
                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                     41
                                                                                                                                                                                                                                                                                                                                        Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-662965/76.
B; AAD21566.
                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Page
```

```
immunostimulatory component; T-cell mediated immune residendritic cell; colon cancer; breast carcinoma; ovarian
                                                                                                   Human
                                                   [mmunostimulatory
                                                                                                   HER500 fusion
                                                fusion protein;
                                                                                                 protein construct comprising OVA-derived octapeptide
                                                   IFP;
                                                   antigen
                                                   component;
```

PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; OVA; ovalbumin-derived

Homo sapiens Unidentified

30-MAR-2001; 2001WO-US10515

DENDREON CORP

Vidovic D, Graddis H

immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -

English.

The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion protein construct which comprises human PAP signal sequence, mature HER-2 membrane distal extracellular domain, an Ala linker, an ovalbumin (OVA)-derived immunodominant octapeptide, HER-2 membrane distal intracellular domain and a C-terminal tag.

564 AA; Lengt.h

100.0%; Llarity 100.0%; Conservative 0; Score 1587; DB 22; Pred. No. 1.9e-131; Mismatches 0; Indels 0 Gaps 0

STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 100

GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ

GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 160

220

**24**0

280

GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329

RESULT

σ

AAB60408

AAB60408 standard; Protein; 645 AA.

Human 24-APR-2001 AAB60408;

ErbB2

oncoprotein,

SEQ

ID NO:13

(first entry)

```
밁
                                     50
                                                                                                                                                                                                          The invention relates to a method for treating cancer in a human patient, CC wherein the cancer expresses epidermal growth factor receptor (EGFR), CC comprising administering an antibody which binds ErbB2 (HER2: AAB60408). CC In particular, the anti-ErbB2 antibody is the murine monoclonal antibody CC 2c4 (AAB60396, AAB60397) or a humanised version of 2c4 (AAB60398, CC AAB60399). The invention also encompasses an isolated nucleic acid cencoding a humanised ErbB2-binding antibody: vectors and host cells CC comprising such nucleic acids; the recombinant production of a humanised CC erbB2-binding antibody: and an immunoconjugate comprising a humanised CC ErbB2-binding antibody; and an immunoconjugate comprising a humanised CC growth factor alpha (TGF-alpha)-activated mitogen activated protein CC (act by antagonising ErbB receptors, and as inhibitors of transforming CC growth factor alpha (TGF-alpha)-activated mitogen activated protein CC (aspecially colon cancer, rectal cancer, colorectal cancer, lung cancer (especially non-small cell lung cancer), or breast cancer (especially colon cancer). The antibodies may also have non-therapautic colorectatic breast cancer is preferable to the use of EGFR-targetted CC to ErbB2 to treat cancer is preferable to the use of EGFR-targetted CC to ErbB2 to treat cancer is preferable to the use of EGFR-targetted CC taving as EgfR is also highly expressed in other tissues such as the CErbB2 are antitopated to have a better safety profile than such drugs.
                                                                                          Query Match
Best Local (
                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    light chain variable region; cancer; cytostatic; EGFR expressing cancer epidermal growth factor receptor; colon cancer; rectal cancer; tumour; colorectal cancer; non-small cell lung cancer; metastatic breast cancer affinity purification.
                                                                                                                                                                                having been observed for EGFR-targetted drugs. Antibodies ErbB2 are anticipated to have a better safety profile than The present sequence represents human ErbB2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Treating cancer in a human, where the cancer expresses epidermal growth factor receptor (EGFR), comprises administering an antibody which binds
                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ErbB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-080862/09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Adams
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-JAN-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200100245-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GETH ) GENENTECH INC
                                                                                       Local
     22
Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fig 1A; 89pp; English.
                                                                                                                                                645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Presta LG,
                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000WO-US17366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9908-0141316
                                                                                                                                              B
                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sliwkowsky M;
                                                                          0
                                                                                        Score 1587;
Pred. No. 2
                                                                          Mismatches
                                                                                        DB 22;
2.2e-131;
                                                                        0;
                                                                        Indels
                                                                                                       Length
                                                                                                                                                                                                  such drugs
                                                                        0
                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cancer
                                                                        0
```

Æ

밁 Q

22

Query Match Matches

Similarity

100.0%;

Score 1587; DB 22; Pred. No. 2.2e-131;

Conservative

0;

Mismatches

Indels Length 645;

0

Gaps

0

81 60 Sequence

645

Ŗ,

```
RESULT 6
AAB61593
$\times \times \
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                           The ErbB family of receptor tyrosine kinases are important mediators of cell growth, differentiation and survival. The receptor family includes four distinct members including Epidermal Growth Factor Receptor (EGFR or ErbB1), HER2 (ErbB2 or pl85^neu), HER3 (ErbB3) and Her4 (ErbB4 or tyro2). The present invention relates to a method for treating prostate cancer. The method comprises administering an antibody which binds ErbB2 and blocks ligand activation of an ErbB receptor. Preferably, the antibody blocks binding of monoclonal antibody 2C4 to ErbB2 and/or blocks TGF-alpha activation of mitogen-activated protein kinase (MAPK). The present sequence is the extracellular domain of human ErbB2.
                                                                                                                                                                                                                                                                                                                                                                                                                 Treating prostate cancer in a human which binds ErbB2 and blocks ligand
                                                                                                                                                                                                                                                                                                                                                             Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-159131/16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Agus DB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (SLOK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23-JUN-2000; 2000WO-US17423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200100238-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human ErbB2 extracellular domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB61593 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GETH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ErbB2; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENENTECH INC.
SLOAN KETTERING INST CANCER RES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ErbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scher HI,
                                                                                                                                                                                                                                                                                                                                                       F1g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0141315
                                                                                                                                                                                                                                                                                                                                                             1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             receptor;
                                                                                                                                                                                                                                                                                                                                                    93pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sliwkowski MX;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; prostate cancer; receptor tyrosine kinase;
monoclonal antibody 2C4; variable light chain.
                                                                                                                                                                                                                                                                                                                                                          English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                    comprises administering an antibody activation of an ErbB receptor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                        tyro2).
                                                                                                                                                                                                                                                  o
F
```

```
RESULT 7
ARAB211200
ID 200
ID 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
  Ouery Match 100.0%;
Best Local Similarity 100.0%;
Matches 289; Conservative (
                                                                                                                                                                                     The present sequence is the extracellular HER-2/neu protein. HER-2/neu is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. An HER-2/neu fusion protein comprising a HER-2/neu extracellular domain fused to HER-2/neu phosphorylation domain may be used to treat or prevent cancer beliciting or enhancing an immune response to the HER-2/neu protein. It may be used to treat or prevent concern alignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HER-2/neu; oncogene; tyrosine kinase; breast cancer; prostate cancer; ovari
                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HER-2/neu extracellular domain/phosphorylation domain useful for vaccinating against breast, ovarian, colon,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      03-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200044899-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     colon cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Extracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB21200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB21200 standard; protein; 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000-505976/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                    neoplasias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORIXA CORP.
SMITHKLINE BEECHAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cancers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9; 128pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000WO-US02164.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HER-2/neu protein.
                                                                                                               Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0117976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       English.
     0;
  Score 1587;
Pred. No. 2.2
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cytostatic; vaccine;
  7; DB 21;
2.2e-131;
hes 0;
     Indels
                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fusion proteins
, lung and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         289
  0
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201
  0,
```

Ş

1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60

```
RESULT 8
AAM51145
    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                       The present sequence is that of the extracellular domain of human Her-2/neu (pl85 glycoprotein or c-erb82), an oncogenic self-protein and target for anti-cancer vaccines. The Her-2/neu gene is amplified and pl85 is overexpressed in a variety of cancers, including breast, ovarian, colon, lung and prostate cancer. Her-2/neu (see AMS1143) is a member of the tyrosine kinase family of receptor-like glycoproteins. It comprises an extracellular domain with homology to the epidermal growth factor receptor (EGFR), a highly hydrophobic transmembrane domain and a C-terminal intracellular domain that also shows homology to EGFR. Its overexpression correlates with a poor prognosis in breast and overtan concern man furnished war finely that also shows homology to EGFR.
ovarian cancers. The invention provides Her-2/neu fusion proteins, nucleic acids encoding them, viral vectors, and vaccines comprising the fusion proteins or nucleic acid molecules. In preferred fusion proteins, the extracellular domain of a Her-2/neu protein is fused to a Her-2/neu intracellular domain or
                                                                                                                                                                                                                                                                                                                 Her-2/neu fusion protein for treating or preventing cancer by or enhancing an immune response to the protein, has Her-2/neu extracellular domain fused to Her-2/neu intracellular or
                                                                                                                                                                                                                                                                                                                                                                                                                                             (CORI-)
                                                                                                                                                                                                                                                                      Claim 2;
                                                                                                                                                                                                                                                                                                     phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-241743/29
                                                                                                                                                                                                                                                                                                                                                                                                               Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-AUG-2000; 2000US-0632507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200212341-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tyrosine kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Her-2/neu; oncogene; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human Her-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAM51145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAM51145 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                           CORIXA CORP.
SMITHKLINE BEECHAM BIOLOGICALS.
                                                                                                                                                                                                                                                                      Fig 9; 141pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001WO-US24283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                oncoprotein
                                                                                                                                                                                                                                                                                                     domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protein;
                                                                                                                                                                                                                                                                                                                                                                                                              Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  c-erbB2; gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  extracellular domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tumour; vaccine; human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 p185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     289
                                                                                                                                                                                                                                                                                                                                                 eliciting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    261
```

```
õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                 AAE13109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            phosphorylation domain (or its DeltaPD fragment). An immune response to Her-2/neu protein is elicited or enhanced by administering the fusion protein in the form of a vaccine, or by transfecting cells of an animal ex vivo with a nucleic acid encoding the fusion protein, and delivering the transfected cells to the animal. The fusion proteins, nucleic acids, and isolated specific T-cells are useful for inhibiting the development of a cancer, especially breast, ovarian, colon, lung or prostate cancer in a patient. T cells that specifically react with a Her-2/neu fusion protein can be used to remove tumour cells from a sample in order to inhibit the development of cancer in a patient.
                                                                                                                                                                                Chimeric -
                                                                                                                                                                                                                                            Immunostimulatory fusion protein; IFP; antigen component; therapy; immunostimulatory component; T-cell mediated immune response; DC; dendrittic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; GM-CSF;
  WPI;
                                                                                                      30-MAR-2001;
                                                                                                                               11-OCT-2001
                                                                                                                                                                                                                      HER-2 protein;
HER500-hGM-CSF
                                                                                                                                                                                                                                                                                                                           Human
                                                                                                                                                                                                                                                                                                                                                                                                    AAE13109 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                             30-MAR-2000;
                                                                                                                                                        WO200174855-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                        HER500-hGM-CSF fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                   DENDREON CORP
                         Vidovic D,
                                                                                                                                                                                Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                             2000US-193504P
                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                      2001WO-US10515
                                                                                                                                                                                                                    granulocyte-macrophage colony stimulating fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ξ
                                                                                                                                                                                            sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                           Graddis
                                                                                                                                                                                                                                                                                                                        protein construct.
                                                                                                                                                                                                                                                                                                                                                                                                     690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                           H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1587; DB 23;
Pred. No. 2.2e-131;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
XXCCCCCCCCCCXXXXA
                          Š
                                                                밁
                                                                                            Q
                                                                                                                                 밁
                                                                                                                                                               Ş
                                                                                                                                                                                                B
                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                             δÃ
밁
                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 hGM-CSF fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature PAP protein, an Ala Arg linker, human granulocyters macrophage colony stimulating factor (GM-CSF) sequence and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           An
of
                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim
281
                                                                221
                                                                                                  181
                                                                                                                                                                 121
                                                                                                                                                                                                  101
                                                                                                                                 161
                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       immunostimulatory fusion protein comprising the intracel. HER-2 and an antigen elicits an immune response to the ar useful for the treatment of associated cancer associated
                                                                                                                                 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                    GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                   STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                    STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
              GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                    GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                  SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7;
                                                                                                                                                                                                                                                                                                                                                                                                     690
                                                                                                                                                                                                                                                                                                                                  100.0%; ilarity 100.0%; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26;
                                                                                                                                                                                                                                                                                                                                                                                                     A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          English.
                                                                                                                                                                                                                                                                                                                                    ..
                                                                                                                                                                                                                                                                                                                                  Score 1587;
Pred. No. 2.4
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                    DB
.4e-1
                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          intracellular
                               289
                                                                                                                                                                                                                                                                                                                                .ö
                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                    60
                                                                                                  240
                                                                                                                                                                                                    160
                                                                                                                                                                                                                                                                                                                                      0
```

. ...

```
RESULT
AAB2120
ID AV
XX
AC AV
AC AV
XX
                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Best I
                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 rCM-CSF fusion protein construct which comprises human PAP signal sequence, mature HER-2 membrane distal extracellular domain, an Ala linker, an ovalbumin (OVA)-derived immunodominant octapeptide, HER-2 membrane distal intracellular domain, an Ala linker, a mature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Laus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 7; Page 27; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
An
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI;
           Human HER-2/neu fusion protein
                                     12-JAN-2001
                                                             AAB21204;
                                                                                      AAB21204 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rat granulocyte-macrophage colony stimulating factor (GM-CSF) sequence and a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (DEND-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-OCT-2001
                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                        161
                                                                                                                                                                                                                                                                                                          101
                                                                                                                                                      281
                                                                                                                                                                                                       221
                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                                                                                                                                                                                                                   Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -
                                                                                                                                                                                                                                                                                                                                                                                                                          Боса1
                                                                                                                                                   GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                     GYVLIAHNOVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                      STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001-662965/76.
DB; AAD21567.
                                                                                                                                                                                                    STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                        GYVLIAHNOVROVPLORLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELO
                                                                                                                                                                                                                                                                                                                                                                                                           Similarity 100.
89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DENDREON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vidovic D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                              697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-193504P
                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₹
                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Sc.
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Graddis
                                                                                      712 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Η
                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1587; DB 22;
Pred. No. 2.4e-131;
                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                        220
                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                           RESULT 12
AAM51149
                                                                                                                                    Ş
                                                                                                                                                                В
                                                                                                                                                                                        Š
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                        Matches
                          AAM51149;
                                                 AAM51149
                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic
17-JUN-2002
                                                                                                                                                                  202
                                                                                                                                                                                          181
                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                    22
                                                 standard; Protein;
```

밁 Š ₽ Ş В Ş 밁 ð 밁 Ş

(first entry)

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence is a fusion protein comprising the extracellular domain and a preferred portion of the phosphorylation domain of the human HER-2/neu protein. HER-2/neu is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. HER-2/neu fusion proteins may be used to treat or prevent cancer by eliciting or enhancing an immune response to the HER-2/neu protein. They may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against these neoplasias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 27; Fig 13; 128pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   useful for vaccinating against breast, prostate cancers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HER-2/neu extracellular domain/phosphorylation domain fusion proteins useful for vaccinating against breast, ovarian, colon, lung and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-505976/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; HER-2/neu; oncogene; tyrosine kinase; cytostatic; vaccine;
breast cancer; prostate cancer; ovarian cancer; lung cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200044899-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CORI-) CORIXA CORP.

(SMIK ) SMITHKLINE BEECHAM
LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                              GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                       STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                   LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        712 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000WO-US02164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0117976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1587; DB 21;
Pred. No. 2.5e-131;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
  310
                                                 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                       81
                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                    240
                                                                                                                                                                                                   201
                                                                                                                                                                                                                                                                                                      141
                                                                                                     261
```

0

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence is that of a fusion protein between the extracellular domain and a fragment (DeltaPD) of the phosphorylation domain of human Her-2/neu (see AAM51143), an oncogenic self-protein and target for anti-cancer vaccines. The fusion protein can be obtained by recombinant DNA methods. Her-2/neu overexpression correlates with a poor prognosis in breast and ovarian cancers. The invention provides Her-2/neu fusion proteins, nucleic acids encoding them, viral vectors, and vaccines comprising the fusion encoding them, viral vectors, and vaccines comprising the fusion proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    proteins or nucleic acid molecules. In preferred fusion proteins, the extracellular domain of Her-2/neu is fused to a Her-2/neu intracellular domain or phosphorylation domain (or its DeltaPD fragment). An immune response to Her-2/neu protein is elicited or enhanced by administering the fusion protein in the form of a vaccine, or by transfecting cells of an animal ex vivo with a nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                            encoding the fusion protein, and delivering the transfected cells to the animal. The fusion proteins, nucleic acids, and isolated specific T-cells are useful for inhibiting the development of a cancer, especially breast, ovarian, colon, lung or prostate cancer in a patient. T cells that specifically react with a Her-2/neu fusion protein can be used to remove tumour cells from a sample in order to inhibit the development of cancer in a patient.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or enhancing an immune response to the protein, has Herextracellular domain fused to Her-2/neu intracellular or phosphorylation domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Her-2/neu fusion protein for treating or preventing cancer by eliciting or enhancing an immune response to the protein, has Her-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        03-AUG-2000; 2000US-0632507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200212341-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Her-2/neu;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Her-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (SMIK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tyrosine
121 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                               82
                                                                                                                61
                                                                                                                                                                            22
                                                                                                                                                                                                                                ب
                                                                                      GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                      GYVLIAHNOVROVPLORLRIVRGTOLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELO
                                                                                                                                                                   STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2002-241743/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37; Fig 13; 141pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORIXA CORP.
SMITHKLINE BEECHAM BIOLOGICALS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             extracellular domain-delta-phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            oncogene;
                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001WO-US24283
                                                                                                                                                                                                                                                                                                                                                                                                 Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note- "extracellular 654..712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               receptor; c-erbB2;
                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cancer; tumour; vaccine; human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "phosphorylation domain fragment"
                                                                                                                                                                                                                                                                                                              Score 1587; DB 23; Pred. No. 2.5e-131;
                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 domain'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               therapy.
                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      p185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   domain fusion
                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                      81
                                                                                                                                                                                                                          60
                                                         141
                                                                                                                                                                                                                                                                                 0
```

0y 0y 0y

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
Query Match
Best Local Similarity
                                                                              that is overexpressed in breast, ovarian can other cancer cells) and granulocyte-macrophage colony stimulating factor (GM-CSF). It is the expression product of a nucleic acid molecule (AAT72725) prepd. by PCR amplification of Her2 cDNA from a breast cancer cell line and fusion to GM-CSF cDNA. Fusion expression vectors can be used to transfect mammalian and insect cells. The Her2-GM-CSF fusion protein is used to generate anti-Her2 immunity. Tumour cells are eliminated by cytotoxic T lymphocytes activated in vivo
                                  Sequence
                                                                     cells are eliminated by cytotoxic T lymphocytes action in vitro by exposure to antigen-presenting cells
                                                                                                                                                                              A fusion protein (AAW19764) comprises Her2 (a growth factor receptor
                                                                                                                                                                                                      Disclosure; Fig 8; 45pp; English.
                                                                                                                                                                                                                             vertebrate
                                                                                                                                                                                                                                      Potent APC that activates T-cells to give multivalent immune response - can also induce a cytotoxic T-cell i
                                                                                                                                                                                                                                                                              N-PSDB;
                                                                                                                                                                                                                                                                                                                                    (ACTI-) ACTIVATED CELL THERAPY INC.
                                                                                                                                                                                                                                                                                                                                                                                    23-DEC-1996;
                                                                                                                                                                                                                                                                                                                                                                                                           10-JUL-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9724438-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Her2-GM-CSF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Her2-GM-CSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW19764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAW19764 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142
                                                                                                                                                                                                                                                                             1997-363674/33.
DB; AAT72725.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                              Ruegg CL,
                                                                                                                                                                                                                            subject
                                     782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunostimulant fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 granulocyte macrophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      receptor;
                                     A
                                                                                                                                                                                                                                                                                                                                                            95US-0579823
                                                                                                                                                                                                                                                                                                                                                                                    96WO-US20241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label- Her2
654..655
                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= GM-CSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label= Linker
                                                                                                                                                                                                                                                                                                               ¥u
 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      oncogene;
 .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                782
 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ye colony stimulating factor;
immunostimulant; cancer;
1587; DB 18;
No. 2.8e-131;
                                                                       exposed to the
                                                                                                                                                                                                                                          response
                                                                                                                                                                                                                                                      cellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         310
                                                                                                                                                                                                                                           'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
```

```
AAB21203
ID AAB21
XX AB21
XX AB21
XX AB21
XX III
AC AAB21
XX I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                          The present sequence is a fusion protein comprising the extracellular domain and the phosphorylation domain of the human HER-Z/neu protein. HER-Z/neu is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-Z/neu gene is an oncogene. HER-Z/neu fusion proteins may be used to treat or prevent cancer by eliciting or enhancing an immune response to the HER-Z/neu protein. They may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against these neoplasias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CORI-)
                                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                             prostate cancers -
                                                                                                                                                                                                                                                                                                                                                                               HER-2/neu extracellular domain/phosphorylation useful for vaccinating against breast, ovarian,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        03-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200044899-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       colon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                breast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB21203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB21203 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000-505976/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     289;
                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HER-2/neu;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ¥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORIXA CORP.
SMITHKLINE BEECHAM
                                                                                                                                                                                                                                                                                                              Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                              12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000WO-US02164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         prostate can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0117976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fusion
                                                                                                                                                                                                                                                                                                         128pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ene; tyrosine kinase; cytostatic; vaccine;
cancer; ovarian cancer; lung cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                 domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                       fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               289
                                                                                                                                                                                                                                                                                                                                                                               n proteins and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

Sequence

vaccines.

protein can

be

obtained

recombinant DNA

```
RESULT 15
AAM51148
  CCCCXXXXIIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 289
          The present sequence is that of a fusion prote
extracellular domain and phosphorylation domai
(see AAM51143), an oncogenic self-protein and
                                                                            Her-2/neu fusion protein for treating or preventing or
or enhancing an immune response to the protein, has He
extracellular domain fused to Her-2/neu intracellular
                                                                                                                                                        (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                               AAM51148;
                                                 Claim
                                                                    phosphorylation
                                                                                                                                      Cheever
                                                                                                                                                                                     03-AUG-2000;
                                                                                                                                                                                                         03-AUG-2001;
                                                                                                                                                                                                                            14-FEB-2002
                                                                                                                                                                                                                                              WO200212341-A2
                                                                                                                                                                                                                                                                           Domain
                                                                                                                                                                                                                                                                                             Domain
                                                                                                                                                                                                                                                                                                     Key
                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                            tyrosine kinase;
                                                                                                                                                                                                                                                                                                                                                     Her-2/neu;
                                                                                                                                                                                                                                                                                                                                                                        Her-2/neu extracellular domain-phosphorylation domain fusion
                                                                                                                                                                                                                                                                                                                                                                                            17-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                AAM51148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                  2002-241743/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSECLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                al Similarity
289; Conser
                                                                                                                                      MA,
                                                                                                                                                        CORIXA CORP
                                               Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                standard;
                                                                                                                                                                                                                                                                                                                                                     oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                    Gheysen
                                                                                                                                                                                     2000US-0632507
                                                                                                                                                                                                         2001WO-US24283
                                                                                                                                                                                                                                                                          /note=
                                                                    domain
                                                141pp;
                                                                                                                                                                                                                                                                                              Location/Qualifiers
1..653
                                                                                                                                                                                                                                                                                                                                            receptor; c-erbB2; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                Protein;
                                                                                                                                                         BEECHAM BIOLOGICALS
                                                                                                                                                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                    "extracellular domain"
                                                                                                                                                                                                                                                                "phosphorylation domain"
                                                 English
                                                                                                                                                                                                                                                                                                                                                                                                                                  919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1587; DB 21; Pred. No. 3.5e-131; Mismatches 0;
n protein between in domain of human I in and target for a cained by recombina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                      cancer by Her-2/neu
                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    289
           n the
n Her-2/neu
r anti-cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   919;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                               eliciting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
```

response to Her-2/neu protein is elicited or enhanced by administering the fusion protein in the form of a vaccine, or by transfecting cells of an animal ex vivo with a nucleic acid encoding the fusion protein, and delivering the transfected cells to the animal. The fusion proteins, nucleic acids, and isolated specific T-cells are useful for inhibiting the development of a cancer, especially breast, ovarian, colon, lung or prostate cancer in a patient. T cells that specifically react with a Her-2/neu fusion protein can be used to remove tumour cells from a sample in order to inhibit the development of cancer in a patient. vaccines comprising the fusion proteins or nucleic acid molecules. In preferred fusion proteins, the extracellular domain of a Her-Z/neu protein is fused to a Her-Z/neu intracellular domain or phosphorylation domain (or its DeltaPD fragment). An immune methods. Her-2/neu overexpression correlates with a poor prognosis in breast and ovarian cancers. The invention provides Her-2/neu fusion proteins, nucleic acids encoding them, viral vectors, and

Sequence Ą,

ş Ş Ş ₽ 밁 밁 밁 Query Match Best Local Similarity Matches 289; Conserv 181 SRCWGESSEDCOSLTRTVCAGGCARCKGPLPTDCCCHEQCAAGCTGPKHSDCLACLHFNHS 240 142 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 121 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120 82 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 141 22 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS Conservative 100.0%; Score 1587; DB 23; 100.0%; Pred. No. 3.5e-131; tive 0; Mismatches 0; Indels Length 919; 0, Gaps 201 81 261 180 0

Search completed: April 28, 2003, 13:39:46 Job time: 26.1973 secs

밁 Ş

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
  716.5
716.5
718.5
708.5
708.5
708.5
708.5
640.5
640.5
6396.5
3390.5
3390.5
3390.5
3390.5
3390.5
3390.5
3390.5
3390.5
3390.5
3390.5
3390.5
3390.5
3390.5
3390.5
                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-821-883-23
: 1587
1 STOV-
                                                                                                                                                                                                                                                                                                                                                                                                                                          PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                          Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             April 28, 2003, 13:38:09; Search time 10.6321 Seconds (without alignments) 2613.108 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              283224 seqs, 96134422 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapop 10.0 , Gapext 0.5
 STQVCTGTDMKLRLPASPET.....FGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                           Length DB
                      E88257
$70712
$70713
GQFFE
D45558
A45558
B45558
B45558
C743250
T18534
$57245
A56081
A36502
                                                                                                                                                                               A36223
JC4387
S06142
A27131
                                                                                                                                                                                                                           GQHUE
A53183
A47253
A36325
                                                                                                                                                                                                                                                                                                                                           Ħ
                                                                                                                                                                                                                                                                        TVCHLV
                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          283224
                                                                         epidermal growth f
kinase-related tra
epidermal growth f
protein-tyrosine k
epidermal growth f
protein tyrosine k
protein tyrosine k
epidermal growth f
insulin receptor-r
insulin-like growt
insulin receptor p
insulin receptor p
                                                                                                                                                                                                                                                            protein-tyrosine k
protein-tyrosine k
p-185 precursor -
epidermal growth f
epidermal growth f
epidermal growth f
                                           protein-tyrosine k
insulin receptor (
insulin receptor -
                                                                                                                                                                                                                                                                                                                                          Description
```

## ALIGNMENTS

				. •	. :
A; Molecule type: DNA A; Molecule type: DNA A; Residues: 832-909 < REX> A; Cross references: GB:L29395; NID:g459807; PIDN:AAA35809.1; PID:g459808 A; Cross references: GB:L29395; NID:g459807; PIDN:AAA35809.1; PID:g459808 A; Tal, M.; King, C.R.; Kraus, M.H.; Ullrich, A.; Schlessinger, J.; Givol, D. Mol. Cell. Biol. 7, 2597-2601, 1987 Mol. Cell. Biol. 7, 2597-2601, 1987 A; Title: Human HER2 (neu) promoter: evidence for multiple mechanisms for transcriptio A; Reference number: 157622; MUID:87286898; PMID:3039351 A; Reference number: 157622 A; Status: translated from GB/EMBL/DDBJ A; Molecule type: DNA A; Residues: 1-191 < TAL>	A;Molecule type: mRNA A;Residues: 1-517,'RALL',522,'S',524-654,'V',656-1169,'A',1171-1255 <cou2> A;Cross-references: GB:M11730; NID:g183986 A;Cross-references: GB:M11730; NID:g183986 R;King, C.R.; Kraus, M.H.; Aaronson, S.A. Science 229, 974-976, 1985 A;Title: Amplification of a novel v-erbB-related gene in a human mammary carcinoma. A;Reference number: I59509; MUID:85272597; PMID:2992089 A;Accession: I59509 A;Status: translated from GB/EMBL/DDBJ</cou2>	A;Title: Tyrosine kinase receptor with extensive homology to EGF receptor shares chro A;Reference number: A44188; MUID:86070181; PMID:2999974 A;Accession: A44188 A;Molecule type: DNA A;Residues: 740-910 <coui> A;Cross-references: GB:M12036; NID:g183988; PIDN:AAA35978.1; PID:g183989 A;Cross-references: GB:M12036; NID:g183988; PIDN:AAA35978.1; PID:g183989</coui>	R:Semba, K.; Kamata, N.; Toyoshima, K.; Yamamoto, T.  Proc. Natl. Acad. Sci. U.S.A. 82, 6497-6501, 1995 A;Title: A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epid A;Reference number: A25491; MUID:86016729; PMID:2995967 A;Accession: A25491 A;Accession: A25491 A;Molecule type: DNA A;Residues: 737-1031 <sem> A;Cross-references: GB:M11767; NID:g182163; PIDN:AAA35808.1; PID:g553282 A;Cross-references: GB:M11767; NID:g182163; PIDN:AAA35808.1; PID:g553282 R;Coussens, L.; Yang-Feng, T.L.; Liao, Y.C.; Chen, E.; Gray, A.; McGrath, J.; Seeburg</sem>	R;Yamanoto, T.; Ikawa, S.; Akiyama, T.; Semba, K.; Nomura, N.; Miyajima, N.; Salto, T. Nature 319, 230-234, 1986  A;Title: Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growt A;Reference number: A24571; MUID:86118663; PMID:3003577  A;Accession: A24571  A;Molecule type: mRNA  A;Residues: 1-1255 <yam>  A;Cross-references: GB:X03363; NID:q31197; PIDN:CAA27060.1; PID:q31198</yam>	protein

```
A;Title: The neu oncogene encodes an epidermal growth factor receptor-rel A;Reference number: A24562; MUID:86118662; PMID:3945311
A;Recession: A24562
A;Molecule type: mRNA
A;Residues: 1-1260 <BAR>
A;Cross-references: EMBL:X03362; NID:g56745; PIDN:CAA27059.1; PID:g56746
R;Masul, T.; Mann, A.M.; Macatee, T.L.; Garland, E.M.; Okamura, T.; Smith Carcinogenesis 12, 1975-1978, 1991
A;Title: Direct DNA sequencing of the rat neu oncogene transmembrane dome a-thiazolyl]formanide or N-methyl-N-nitrosourea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;22-1255/Product: protein-tyrosine kinase erbB2 #status predicted <MAT>
F;22-653/Domain: extracellular #status predicted <EET>
F;20-653/Domain: EGF receptor extracellular domain repeat <EE1>
F;395-605/Domain: EGF receptor extracellular domain repeat <EE2>
F;395-605/Domain: transmembrane #status predicted <TMM>
F;595-605/Domain: intracellular #status predicted <TMM>
F;661-75/Domain: protein kinase homology <KIN>
F;718-993/Domain: protein kinase ATP-binding motif
F;718-993/Domain: protein kinase ATP-binding motif
F;68,124,187,259,530,571,629/Binding site: carbohydrate (Asn) (covalent) #status predicted
F;686/Binding site: hosphate (Thr) (covalent) (by protein kinase C) #status predicted
F;753/Active site: Lys #status predicted
F;753/Active site: Lys #status predicted
                                                                                                                                                                                                                                                           C;Species: Rattus norvegicus (Norway re C;Date: 31-Dec-1988 #sequence_revision C;Accession: A24562; A61204 R;Bargmann, C.I.; Hung, M.C.; Weinberg, Nature 319, 226-230, 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A:Introns: 25/1; 75/3; 147/1; 883/3
A:Note: the list of introns is incomplete
C:Function:
A:Description: catalyzes the phosphorylation of a peptidyl tyrosine residue by ATC:Superfamily: epidermal growth factor receptor; protein kinase homology
C:Superfamily: autophosphorylation; duplication; glycoprotein; phosphoprotein;
    A;Reference number: A61204; MUID:92035293;
A;Accession: A61204
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                 protein-tyrosine kinase (EC 2.7.1.112) neu precursor C;Species: Rattus norvegions (Norman ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F;1-21/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Gene: GDB:ERBB2; NGL; NEU; HER-2
A;Cross-references: GDB:120613; OM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            position: 17q21.1-17q21.1
rons: 25/1; 75/3; 147/1; 883/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GB:M16792; NID:g183983;
                                                                                                                                                                                                                                                                                      M.C.; Weinberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120613; OMIM:164870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            overexpression of this erbB-related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1587; DB 1;
Pred. No. 2.6e-109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                              31-Dec-1988
                                                                                                                                                                                                                                                                                      R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIDN: AAA58637.1; PID: 9553332
                                                                                                                                                                                                                                                                                                                            #text_change
                                                                                 transmembrane domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              289
                                                                                                                                                                                                                                              receptor-related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (by autophosphorylation)
                                                                                                                                                                                                                                                                                                                              11-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene occurs
                                                                                                                       Smith,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81
                                                                                 reveals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 predicted
                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            about
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           phospho
                                                                                                                     Cohen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      predic
                                                                                                                                                                                                A;Gene: neu
C;Superfamily: epid
C;Keywords: ATP
F;718-983/Domain: g
F;726-734/Region: g
Ş
                                       밁
                                                                         QY
                                                                                                                                                                                                                                                                                                                                               A; MOLECULE type: mRNA
A; Residues: 1-1254 < RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                            A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;Nakamura,
                                                                                                                       Query Match
Best Local S
Matches 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gene: neu
                                                                                                                                                                                                                                                                                                           Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
      62
                                         23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
YVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQL 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
247; Conserv
                                                                                                                                            Similarity
                                                                                                                                                                                                                                                               epidermal
```

```
A; Molecu
A; Residu
A; Note:
C; Geneti
A; Gene:
                                                                                                                                                                                                                                                                                                                                            Gene 140, 251-255, 1994
A;Title: Cloning and activation
A;Reference number: I48161; MUII
A;Accession: I48161
                                                                                                                                                                                                                                                                                                                                                                                                                                       p-185 precursor - golden hamster
C;Species: Mesocricetus auratus (golden hamster)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-19
C;Accession: I48161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;723-988/Domain: protein kinase homology <KIN>
F;731-739/Region: protein kinase ATP-binding motif
F;731,191,563,535,576,634/Binding site: carbohydrate (Asn) (covalent)
F;691/Binding site: phosphate (Thr) (covalent) #status predicted
F;759/Active site: Lys #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;1-19/Domain: autophosphorylation; duplication; glycoprotein; phosphore f;20-1260/Product; protein-tyrosine kinase no. """
F;658-680/Domain: trotein-tyrosine kinase no. """
                                                                                                                                                                                                                                                                                                        A;Status: preliminary; translated A;Molecule type: mRNA
                                                                                                                                                 718-983/Domain: protein kinase homology 726-734/Region: protein kinase ATP-bindi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;Molecule type: DNA;Residues: 637-663,'V',665-702;Residues: 637-663,'V',665-702;Note: authors translated the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           882,1227,1253/Binding site: phosphate (Tyr) (covalent)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVT-GASPGGLRELQ
                 TQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHS
TQVCTGTDMKLRLPASPETHLDIVRHLYQGCQVVQGNLELTYLPANATLSFLQDIQEVQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GICELHCPALVTYNTDTFESMHNPEGRYTFGASCVTTCPYNYLSTEVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NHCWGESPEDCQILTGTICTSGCARCKGRLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LRSLTEILKGGVLIRGNPQLCYQDMVLWKDVFRKNNQLAPVDIDTNRSRACPPCAPACKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YMLIAHNQVKRVPLQRLRIVRGTQLFEDKYALAVLDNRDPQDNVAASTPGRTPEGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                       Ushijima, T.; Ishizaka,
                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                  GB:D16295; NID:g493236; PIDN:BAA03801.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  85.3%;
85.5%;
                                                                                                                                                                                                          growth factor receptor;
                                                                                         83.30;
                                                                                                                                                                                                                                                                                                                                                               tion of the Syrian hamster neu
MUID:94193007; PMID:7908275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon
                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <MAS>
                                                                                                                                                   ATP-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1353.5; DB 1
Pred. No. 4.4e-92;
3; Mismatches 28;
                                                                                         Score 1322;
Pred. No. 9
                                                                                                                                                                                                                                                                                                                          from GB/EMBL/DDBJ
                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-Jul-1996
                                                                                                                                                                                                                                                                                                                                                                                                                       Y.; Nagao, M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                                                                       <KIN>
                                                                                                                                                   motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            residue
                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                           #text_change 18-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25
                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                       Arai, M.; Yamazaki,
                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1260;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            as
                                                                                                                                                                                                          kinase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #status
                                                                                                                                                                                                                                                                                                                                                                                 proto-oncogene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Val
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                314
                                                                                                                                                                                                                                                                  PID: 9747595
                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 phosphoprotein;
                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . :
~
82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                   6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                         ۲.;
                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲
                                                                                                                                                                                                                                                                                                                                                                                                                           Ishika
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 phos
```

```
A; Note:
C; Superf
C; Keywor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MR; Filckinger, T.W.; Maihle, N.J.; Kung, H.J.
MO1. Cell. Biol. 12, 883-893, 1992
A; Title: An alternatively processed mRNA from the avian A; Reference number: A42032; MUID:92123214; PMID:1732751
A; Accession: A42032
R:Lax, I.; Johnson, A.; Howk, R.; Sap, J.; Bellot, F.; Winkler, M.; Ullrich, A.; Vmol. Cell. Biol. 8, 1970-1978, 1988
A;Title: Chicken epidermal growth factor (EGF) receptor: cDNA cloning, expression A;Reference number: A27720; MUID:88261272; PMID:3260329
                                                                                 epidermal growth factor receptor precursor - chicken N:Contains: protein-tyrosine kinase (EC 2.7.1.112) e. C:Species: Gallus gallus (chicken) C:Date: 28-Feb-1986 #sequence_revision 05-May-1995 #
                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Molecule type: mRNA
A;Residues: 1-327 <FLI>
A;Cross-references: GB:M77637; NID:g211737; PIDN:AAA48759.1; PID:g211738
A;Experimental source: liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               epidermal growth factor receptor - C; Species: Gallus gallus (chicken)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                   C; Accession: A27720; A00643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 18-Jun-1999
C;Accession: A42032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Note: sequence extracted from NCBI backbone (NCBIN:76892, NCBIP:76893); Note: sequence extracted from NCBI backbone (NCBIN:76892, NCBIP:76893)
                                                                                                                                                                                                                                                                                                                                   182
                                                                                                                                                                                                                                                                                                                                                                    149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  122
                                                                                                                                                                                                                                                                                                208
                                                                                                                                                                                                                                                                                                                                                                                                      123
                                                                                                                                                                                                                                                                                                                                                                                                                                         86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
mes 139; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               w
                                                                                                                                                                                                                                            GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KVCQGTNNKLTQLGHVEDHFTSLQRMYNNCEVVLSNLEITYVEHNRDLTFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY 62
                                                                                                                                                                                                                                                                                             HCWGAGEQNCQTLTKVICAQQCSGRCRGKVPSDCCHNQCAAGCTGPRESDCLACRKFRDD
                                                                                                                                                                                                                                                                                                               RCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHS
                                                                                                                                                                                                                                                                                                                                                                  RLSEILNGGVKISNNPKLCNMDTVLWNDIIDTSRK-PLTVLDFASNLSSCPKCHPNCTED
                                                                                                                                                                                                                                                                                                                                                                                    SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLID-TNRSRACHPCSPMCKGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VLTALNMVDVIPLENLQIIRGNVLYDNSFALAVLSNYH-MNKTQ------GLRELPMK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTTCPYNYLSTEVGS 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RSLTEILKGGVLIRGNPQLCYQDTVLWKDVFRKNNQLAPVDIDTNRSRACPPCAPACKDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HCWGASPEDCQTLTGTIAPRAVPAARARLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATP; growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 739; DB 2;
Pred. No. 3.9e-47;
8; Mismatches 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chicker
                                                                                 05-May-1995 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            c-erbB
                                                                                                                                                                                                                           316
                                                                                                                                                                                                                                                            289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                     04-Feb-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          encodes a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                     148
                                                                                                                                                                                                                                                                                             267
                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 142
                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          262
                                                                                                                                                                                                                                                                                                                                                                  207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            soluble,
                  in
                  ij
                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                       rg, P.H.
```

```
F;719-984/Domain: protein kinase homology <KIN>
F;727-735/Region: protein kinase ATP-binding motif
F;727-735/Region: protein kinase ATP-binding motif
F;136,202,280,361,370,422,575,580,615,635/Binding site: carbohydrate (F;192,650/Binding site: carbohydrate (Ser) (covalent) #status predicted
F;687/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicte
F;754/Active site: Lys #status predicted
F;754/Active site: Lys #status predicted
F;1100,1183,1208/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation) #s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F;31-1223/Product: epidermal growth factor receptor #status F;31-64/Domain: extracellular #status predicted <EXT> F;31-64/Domain: EGF receptor extracellular domain repeat <F;397-610/Domain: EGF receptor extracellular domain extracellular domain e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F;678-1223/Domain: intracellular #status predicted <INT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F;397-610/Domain: EGF receptor extracellular domain rep
F;655-677/Domain: transmembrane #status predicted CMMV>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pecific protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Keywords: alternative splicing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Gene: erbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Cross-references: GB:M10066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 585-1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Title: c-erbB activation in A; Reference number: A00643; MU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Nilsen, T.W.; M
Cell 41, 719-726,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Cross-references: GB:M20386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Superfamily: epidermal growth factor receptor; protein kinase homology; Superfamily: epidermal growth factor receptor; protein; glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1-30/Domain: signal sequence #status predicted <SIG>
    265
                                                                                    241
                                                                                                                                                                                       205
                                                                                                                                                                                                                                                                      182
                                                                                                                                                                                                                                                                                                                                                               146
                                                                                                                                                                                                                                                                                                                                                                                                                                                         123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63 VLIAHNOVROVPLORLRIVRGTOLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35 KVCQGTNNKLTQLGHVEDHFTSLQRMYNNCEVVLSNLEITYVEHNRDLTFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         w
                                                                                    GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                             SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLID-TNRSRACHPCSPMCKGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY 62
ATCKDTCPPLVLYNPTTYQMDVNPEGKYSFGATCVRECPHNYVVTDHGS
                                                                                                                                                                                                                                                                                                                                                               RLSEILNGGVKISNNPKLCNMDTVLWNDIIDTSRK-PLTVLDFASNLSSCPKCHPNCTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VLIALNMYDVIPLENLQIIRGNVLYDNSFALAVLSNYH-MNKTQ-----;--GLRELPMK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1-1223 <LAX>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Maroney, P.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in ALV-induced erythroblastosis:
    MUID:85228222;    PMID:2988784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Goodwin, R.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 739; DB 1; Length 1223; 
Pred. No. 9e-47; 
8; Mismatches 90; Indels J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rottman, F.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CEE1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <EE2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      novel RNA processing
313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Crittenden,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AMATY
                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                               204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           L.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Raines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
```

```
epidermal growth factor receptor precursor - human
N;Contains: protein-tyrosine kinase (EC 2.7.1.112) erbB
C;Species: Homo sapiens (man)
C;Date: 15-Nov-1984 #sequence_revision 27-Nov-1985 #text_change 11-Jun-1999
C;Date: 15-Nov-1984 #sequence_revision 27-Nov-1985 #text_change 11-Jun-1999
C;Accession: A00641; A25772; S30024; A38672; A00642; A43655; A33062; A05381; A60143;
R;Ullrich, A.; Coussens, L.; Hayfilck, J.S.; Dull, T.J.; Gray, A.; Tam, A.W.; Lee, J.
Rature 309, 418-425, 1984
A;Title: Human epidermal growth factor receptor cDNA sequence and aberrant expression
A;Title: Human epidermal growth factor receptor cDNA sequence and aberrant expression
A;Reference number: A00641; MUID:84219729; PMID:6328312
A;Accession: A00641
A;Molecule type: mRNA
A;Residues: 1-1210 <ULL>
A;Cross-references: EMBL:X00588; NID:931113; PIDN:CAA25240.1; PID:9757924
A;Note: the authors translated the codon AAG for residue 540 as Asn
```

G.T.;

Pastan,

Comment: Binding

0f

EGF

6

the receptor leads

ç

internalization

of

the

EGF-recepto

```
Nature 309, 270-273, 1984
A;Title: ATP-stimulated interaction between epidermal growth A;Title: ATP-stimulated interaction between epidermal growth A;Reference number: A38023; MUID:84191554; PMID:6325948
A;Contents: annotation; receptor activity
A;Note: the EGF receptor (and other tyrosine kinases) can nic A;Chen, W.S.; Lazar, C.S.; Lund, K.A.; Welsh, J.B.; Chang, C.
                                                                                                                                                                                                                                                                                                                        A;Accession: A05281
A;Molecule type: protein
A;Residues: 25-30, 'S',32-51;454-467 <WEB>
R;Russo, M.W.; Lukkas, T.J.; Cohen, S.; Star
J. Biol. Chem. 260, 5205-5208, 1985
A;Title: Identification of residues in the
A;Reference number: A60143; MUID:85182650;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R; Haley, J.
J. Biol. Ch
                                                                                                                                                                                                                                                         A:Accession: A60143
A:Molecule type: protein
A:Residues: 740-744,'X',746-747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residues: 'RCAWRRA', 150-187, 'KSVIQAV', 195, 'M', 197, 'A', 199-222, 'S', 224-304, 'RA', 307-32
', 798-799, 'TD', 802-811, 'R', 813-942 <XUY>
A; Experimental source: A431 human carcinoma cells, which have large numbers of EGF rece
R; Lin, C.R.; Chen, W.S.; Kruiger, W.; Stolarsky, L.S.; Weber, W.; Evans, R.M.; Verma, I
Science 224, 843-848, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Haley, J.; Whittle, N.; Bennett, P.; Kinchington, D.; Ull Oncogene Res. 1, 375-396, 1987
A; Title: The human EGF receptor gene: structure of the 110 A; Reference number: S30024; MUID:88217333; PMID:3329716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Experimental source: epidermoid carcinoma R;Simmen, F.A.; Gope, M.L.; Schulz, T.Z.; Wr Biochem. Biophys. Res. Commun. 124, 125-132,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: Human epidermal growth factor receptor cDNA is A;Reference number: A00642; MUID:84245835; PMID:6330563 A;Accession: A00642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:M38425; NID:9181977; PIDN:AAA63171.1; PID:9553271 A;Experimental source: Carcinoma cell line A431-7 R;Xu, Y; IShil, S; Clark, A.J.L.; Sullivan, M.; Wilson, R.K.; Ma; D.P. Nature 309, 806-810, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Biol. Chem. 266, 1746-1753, 1991 A;TItle: Contributory effects of de A;Reference number: A38672; MUID:91: A;Accession: A38672
A; Title: Functional independence of the epidermal A; Reference number: A33331; MUID: 90003233; PMID: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Weber, W.; Gill, G.N.; S
Science 224, 294-297, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1028-1210 <SIM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A23062; A; Accession: A23062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Title: Expression cloning of human EGF receptor complementary A; Reference number: A43615; MUID:84196372; PMID:6326261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-29 <HAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-29 <HA2>
                                                                                                                                                                                                                              R; Mroczkowski, B.; Mosig,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: A05281; MUID: 84172183; PMID: 6324343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Residues: 713-964 <LIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A25772; A; Accession: A25772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: S30024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Title: Characterization and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cross-references: GB:M11234; NID:g181981; PIDN:AAA52370.1; PID:g553272; Haley, J.; Whittle, N.; Bennett, P.; Kinchington, D.; Ullrich, A.; Waterfield,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cross-references: EMBL:X06370; NID:g31118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Status: translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .D.; Waterfield,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A4361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Y.; Stratton, R.H.; Roe, B./
Sci. U.S.A. 82, 4920-4924,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                epidermoid carcinoma cell line A431
4.L.; Schulz, T.Z.; Wright, D.A.; Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Speiss,
                                                                                                                                                                                                                                 G.; Cohen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ts of de Novo transcription a MUID:91107677; PMID:1988448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MUID:85046483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MUID:85270438;
                                                                                                                                                                                                                                                           <RUS>
                                                                                                                                                                                                                                                                                                                                                                                                        7 <WEB>
S.; Staros,
                                                                                                                                                                                                                                 ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B.A.; Merlino,
24, 1985
idermal growth factor receptor PMID:2790960
                                                                                                                                                                                                                                                                                                                                     nucleotide binding PMID: 2985580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PMID:2991899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIDN:CAA29668.1;
                                                                                                                                                                                                                                                                                                                                                                                                             J.V.
                                                                          can nick double stranded hang, C.P.; Walton, G.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Carpenter,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  premature transcript
                                                                                                                                                                              factor
                                                                                                                                                                                                                                                                                                                                                           site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PID:931119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ma; D.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ດ
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                           of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and identification
                                                                                                                                                                              receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene amplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a variety
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        O'Malley,
                          from a
                                                                                                                                                                                                                                                                                                                                                           epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Roe,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       epidermal
                                                                                                                                                                            and
                                                                       Der,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0f
                          domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     termina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B. ₩.
                                                                                                                                                                              superc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X
                                                                          C
                                                                                                                                                                                                                                                                                                                                                           gro
```

```
epidermal growth factor receptor precursor - mouse ()Species: Mus musculus (house mouse) C;Species: Mus musculus (house mouse) C;Date: 06-Jan-1955 #sequence_revision 06-Jan-1995 #text_change 18-Jun-1999 C;Accession: A53183; A43818; S24942; A28941; S45325; I49543 R;Luetteke, N.C.; Phillips, H.K.; Qiu, T.H.; Copeland, N.G.; Earp, H.S.; Jei Genes Dev. 8, 399-413, 1994 Genes Dev. 8, 399-413, 1994 A;Reference number: A53183; MUID:94170986; PMID:8125255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-reretation: 7p12.3-7p12.1
A;Map position: 7p12.3-7p12.1
C;Superfamily: epidermal growth factor receptor; protein kinase homology C;Superfamily: epidermal growth factor duplication; glycoprotein; phosphol C;Keywords: ATP; autophosphorylation; duplication; esign common duplication; phosphol C;Keywords: ATP; autophosphorylation; duplication; someone duplication; phosphol C;Keywords: ATP; autophosphorylation; duplication; protein kinase homology C;Keywords: ATP; autophosphorylation; duplication; protein kinase homology C;Keywords: ATP; autophosphorylation; duplication; protein kinase homology C;Keywords: ATP; autophosphorylation; duplication; 
submitted to the EMBL Data
A; Reference number: S24942
A; Accession: S24942
A; Molecule type: mRNA
                                                                                                                                                                                                                           A; Reference number: A431
A; Accession: A43818
A; Molecule type: mRNA
A; Residues: 1-714 <AVI>
                                                                                                                                                 A;Cross-references: GB:X59698 R:Eisinger, D.P.; Serrero, G.
                                                                                                                                                                                                                                                                                                                                                                                Oncogene 6, 673-676, 19 A; Title: Comparison of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Cross-references: GB:U03425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-1210 <LUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              F:1047-1210/Region: inhibitory F:128,175,352,413,444,528,603/Binding site: carbohydrate (Asn) (covalent): F:745/Active site: Lys \#status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F;669-1210/Domain: intracellular #status predicted <INT> F;710-75/Domain: protein kinase homology <KIN> F;718-726/Region: protein kinase ATP-binding motif F;799-1046/Region: coated-pit mediated internalization s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;25-645/Domain: extracellular #status predicted <EXT>
F;75-500/Domain: EGF receptor extracellular domain repeat <EE1>
F;390-600/Domain: EGF receptor extracellular domain repeat <EE2:
F;346-668/Domain: transmembrane #status predicted <TMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; Avivi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: A53183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F;25-1210/Product: EGF receptor #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   183 CWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                123 SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89 VLIALNTVERIPLENLQIIRGNMYYENSYALAVLSNYD-----ANKTGLKELPMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29 KYCQGTSNKLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRNYDLSFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                                                                                                                                                                                                                                                                                                                                                                                                                    A.; Lax, I.; Ull
6, 673-676, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NLQEILHGAVRFSNNPALCNVESIQWRDIVSSDFLSNMSMDFQNHLGSCQKCDPSCPNGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                             Serrero,
                                                                                                                                                                                                                                                                                                                                         of EGF receptor sequences A43818; MUID:91232866; PMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ullrich,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                45.18;
                                                                                                                 Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 716.5; DB 1;
Pred. No. 4.1e-45;
""" tomatches 99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Schlessinger,
                                                                                                                                                                                                                                                                                                                                             Ces as a guide
PMID:2030916
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ٦
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Givol,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1210;
                                                                                                                                                                                                                                                                                                                                                                                    ៥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <EE2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ...
                                                                                                                                                                                                                                                                                                                                                                                    study the
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Morse,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 phosphoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H.S.; Jenkins,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                    ligand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the EGF recepto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #status
                                                                                                                                                                                                                                                                                                                                                                                binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 بخ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 phos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pre
```

```
F;648-670/Domain: transmembrane ***carrow F--KIN>
F;712-977/Domain: protein kinase homology <KIN>
F;712-977/Domain: protein kinase ATP-binding motlf
F;720-728/Region: protein kinase ATP-binding motlf
F;680,695/Binding site: phosphate (Thr) (covalent) *status experimental
F;697,1070,1071/Binding site: phosphate (Ser) (covalent) *status experimental
F;993/Binding site: (or 997) phosphate (Ser) (covalent) *status experimental
F;993/Binding site: (or 1030 or 1032) phosphate (Ser) (covalent) *status experimental
epidermal growth factor receptor, HER4 - human C;Species: Homo sapiens (man) C:Date: 22-Sep-1993 #sequence_revision 18-Nov-C;Accession: A47253 R;Plowman, G.D.; Culouscou, J.M.; Whitney, G.S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type: protein
A;Residues: 689-694,'X',696-704,'L',706-707;989-992,'XX',995-996,'X',998-1000;1002-1009
A;Residues: 689-694,'X',696-704,'L',706-707;989-992,'XX',995-996,'X',998-1000;1002-1009
A;Hibbs, M.L.; Dunn, A.R.; Alexander, W.S.
submitted to the EMBL Data Library, April 1994
A;Description: The complete cDNA sequence of the Mouse Epidermal Growth Factor Receptor
                                                                                                                                                                                       RESULT
A47253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Molecule type: DNA
A; Residues: 1-971,'K', 973-1210 <VER>
A; Residues: 1-971,'K', 973-1210 <VER>
A; Cross-references: EMBL: X79987; NID: g488830; PIDN: CAA55587.1;
R: Paria, B.C.; Das, S.K.; Andrews, G.K.; Dey, S.K.
Proc. Natl. Acad. Sci. U.S.A. 90, 55-59, 193
A; Title: Expression of the epidermal growth factor receptor gen
A; Reference number: 149643; MUID: 93126380; PMID: 7678348
A; Accession: 149643
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Superfamily: epidermal growth factor receptor; protein kinase homo: C;Keywords: ATP; growth factor receptor; kinase-related transforming C;Keywords: ATP; growth factor receptor; kinase-related transforming C;Keywords: ATP; growth factor receptor; kinase-related transforming C;Keywords: ATP; growth factor receptor; protein kinase homo: C;Keywords: ATP; growth factor receptor; kinase-related transforming C;Keywords: ATP; growth 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: mRNA
A;Residues: 12-20,22-132 <RES>
A;Cross-references: GB:L06864; NID:g193001; PIDN:AAA53029.1; PID:g567201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Description: The complete A; Reference number: $45325 A; Accession: $45325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Reference number: A28941; MUID:88330814; PMID:3138233 A;Accession: A28941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 969-971,
A; Cross-references:
R; Helsermann, G.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Residues: 969-971, 'K', 973-1115, 'D'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               123
                                                                                                                                                                                                                                                                                                                                255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDTQEVQGY 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  translated from
                                                                                                                                                                                                                                                                                                                            QDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                              PNGSCWGGGEENCQKLTKIICAQQCSHRCRGRSPSDCCHNQCAAGCTGPRESDCLVCQKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NLQEILIGAVRFSNNPILCNMDTIQWRDIVQNVFMSNMSMDL----QSHPSSCPKCDPSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                                                                                                                                                                                                                                         NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SLTEILKGGVLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSRACHPCSPMC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VLIALNTVERIPLENLQIIRGNALYENTYALAILSN--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KVCQGTSNRLTQLGTFEDHFLSLQRMYNNCEVVLGNLEITYVQRNYDLSFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1ces: EMBL:Z12608
3.J.; G111, G.N.
263, 13152-13158, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45.1%; Score 716.5;
47.3%; Pred. No. 4.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 4.1e-45,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIB>
                                                                       18-Nov-1994 #text_change 18-Jun-1999
       G.S.; Green,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
          й.
М.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -YGTNRTGLRELPMR
       Carlton, G.W.;
                                                                                                                                                                                                                                                                                                                                                                                      289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PID:g488831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            regulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        phosphorylated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       experimental
       Foy,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             phosphopro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mouse
          ۲.;
                                                                                                 Š
                                                                                                                                                                                망
                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
```

181

138

123

89

```
A;Title: Ligand-specific activation of HER4/p180ezbB4, a A:Reference number: A47253; MUID:93189574; PMID:8383326 A;Statue: A-7-253
                                                                                                                                                                A;Residues: 1997 A;Residues: 1997 A;Cross-references: GB:M37394
C;Superfamily: epidermal growth factor receptor; protein kinase
C;Superfamily: alternative splicing; ATP; growth factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;716-981/Domain:
F;724-732/Region:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Residues: 1-1308 <PLO>
A; Cross-references: GB:L07868; NID:g337359; PIDN:AAB59446.1; PID:g337360
A; Cross-references: GB:L07868; NID:g337359; PIDN:AAB59446.1; PID:g337360
                                                                                                                                                                                                                                                                                            A; Reference number: A; Accession: A36325
                                                                                                                                                                                                                                                                                                                                                                                                         C; Species: Rattus norvegicus (Norway ra C; Date: 25-Jan-1991 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Note: sequence extracted from NCBI backbone (NC; Superfamily: epidermal growth factor receptor; C; Keywords: ATP; growth factor receptor
                                                                                                                                                                                                                                                        A; Molecule type: mRNA
                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                   A; Title: A truncated,
                                                                                                                                                                                                                                                                                                                                                        MOL.
                                                                                                                                                                                                                                                                                                                                                                     R; Petch,
                                                                                                                                                                                                                                                                                                                                                                                        C; Accession: A36325
                                                                                                                                                                                                                                                                                                                                                                                                                                              epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A36325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary; not compared
                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                      Cell. Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
63
                                    29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                     L.A.; Harris,
                                                                    QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSF1.QDIQEVQGY
VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                                                                                                                                                                                                                                                                         growth factor receptor - rat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                    KVCQGTSNRLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRNYDLSFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SGACVTQCPQTFVYNPTTFQLEHNFNAKYTYGAFCVKKCPHNFV 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -RCWGPTENHCQTLTRTVCAEQCDGRCYGPYVSDCCHRECAGGCSGPKDTDCFACMNFND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SRCWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LKNLTEILNGGVYVDQNKFLCYADTIHWQDIVRNPWPSNLTLVSTNGSSGCGRCHKSCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GYVLVALNQFRYLPLENLRIIRGTKLYEDRYALAIFLNYRKDGNF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SQSVCAGTENKLSSLSDLEQQYRALRKYYENCEVVMGNLEITSIEHNRDLSFLRSVREVT 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                        10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein kinase homology <K.
protein kinase ATP-binding
                                                                                                                                                                                                                                                                                                                 A36325; MUID:90258888;
                                                                                                                                                                                                                                                                                                                                 2973-2982, 1990 secreted form of the
                                                                                                                                                                                                                                                                                                                                                                       J.; Raymond,
                                                                                                                            44.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45.18;
                                                                                                           41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   homology <KIN>
                                                                                                            Pred. No. 8.5
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 716.5; DB : Pred. No. 4.4e-45
                                                                                                                                             Score 708.5;
                                                                                                                                                                                                                                                                                                                                                                     V.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                           25-Jan-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 conceptual
                                                                                                                                                                                                                                                                                                                                                                       Blasband,
                                                                                                                                                                                                                                                                                                                 epidermal growth PMID:2342466
                                                                                                                              8.5e-45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  motif
                                                                                                                                                 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                       #text_change 10-Oct-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 translation
                                                                                                                                                                                                                                                                                                                                                                     A ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            283
                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                       Lee,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       kinase, homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fourth member of the epiderm
                                                                                                                                                                                                                                                                                                                                   factor receptor is
                                                                                                                                                                                                                                                                                                                                                                       D.C.;
                                                                                                            13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GLOELG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135
                                      88
                                                                    62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   239
                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ψ
                                                                                                                                                                                                                                                                                                                                   encode
```

```
RESULT 11
JC4387
epidermal
epidermal growth factor receptor homolog precursor N;Alternate names: ErbB3 protein; HER3 protein C;Species: Rattus norvegicus (Norway rat) C;Date: 17-Jan-1996 #gannoncommon rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Gene: GDB:ERBB3; HER3
A;Cross-references: GDB:119880; OMIM:190151
A;Map position: 12q13-12q13
C;Superfamily: unassigned Ser/Thr or Tyr-specific protein C;Keywords: ATP; phosphotransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C:Species: Homo sapiens (man)
C:Date: 04-Oct-1991 #sequence_revision 13-Jan-1993 #text_change 17-N
C:Accession: A35223; IS9164
R:Kraus, M.H.; Issing, W.; Miki, T.; Popescu, N.C.; Aaronson, S.A.
Proc. Natl. Acad. Sci. U.S.A. 86, 9193-9197, 1989
A:Title: Isolation and characterization of ERBB3, a third member of A:Reference number: A36223; MUID:90083234; PMID:2687875
A:Accession: A36223
                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Plowman, G.D.; Whitney, G.S.; Neubauer, M.G.; Green, J.M.; McDonald, V.L.; Proc. Natl. Acad. Sci. U.S.A. 87, 4905-4909, 1990
A;Title: Mclecular cloning and expression of another epidermal growth factor A;Reference number: I59164; MUID:90311312; PMID:2164210
A;Accession: I59164
                                                                                                                                                                밁
                                                                                                                                                                                             Š
                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              F;707-972/Domain: protein F;715-723/Region: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: mRNA
A;Residues: 1-559,'G',561-957,'F',959-1063,'G',1065-1342 <RES>
A;Cross-references: GB:M34309; NID:g183990; PIDN:AAA35979.1; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1-1342 <K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Residues: 1-1342 <KRA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                252
                                                                                                                                                                                                   240
                                                                                                                                                                                                                                             193
                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                          136
                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25
                                                                                                                                                                                                                                                                                                                                                                                                                                          61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ds: ATP; phosphotransferase
2/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                                  SRCWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNH
                                                                                                                                                                                                                                                                                                                                               LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                              SGACVPRCPQPLVYNKLTFQLEPNPHTKYQYGGVCVASCPHNFV 295
                                                                                                                                                                                                   SGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL 283
                                                                                                                                                                                                                                                                                                                                                                                                     GYVLVAMNEFSTLPLPNLRVVRGTQVYDGKFAIFVM----LNYNT----NSSHALRQLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SQAVCPGTLNGLSVTGDAENQYQTLYKLYERCEVVMGNLEIVLTGHNADLSFLQWIREVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -RCWGPGSEDCQTLTKTICAPQCNGHCFGPNPNQCCHDECAGGCSGPQDTDCFACRHEND
                                                                                                                                                                                                                                                                                                                        LTQLTEILSGGVYIEKNDKLCHMDTIDWRDIVRDRD---AEIVVKDNGRSCPPCHEVCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHGS 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            transforming protein (erbB3) (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43.2%;
46.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                kinase ATP-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 686; DB 2
Pred. No. 8e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.7.1.-) precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #text_change 17-Nov-2000
#text_change 13-Nov-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1342;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kinases;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PID: g306841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the ERBB/epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           factor receptor-r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Todaro,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          homol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ດ
      A; Nedwar type: DNA
A; Residues: 821-1025,'N',1027-1098,'A',1100-1166 <ADA>
A; Residues: 821-1025, 'N',1027-1098,'A',1100-1166 <ADA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
S06142
  A;Cross-references:
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-1166 <WIT>
                                                                                                                                                                                                                                                                                                   Nature 341, 415-421, 1989
A; Title: Novel putative re
                                                                                                                                                                                                                                                                                                                                      C; Accession: S06142; S13809 R; Wittbrodt, J.; Adam, D.; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                A; Reference number: S06142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: ErbB3
                                                                                                                                                                                                                                                           A; Accession: S06142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
```

```
A;Molecule type: mRNA
A;Residues: 1-1339 (HELDA
A;Cross-references: GHELDA

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C:Accession: JC4387
R;Hellyer, N.J.; Kim, H.H.; Greaves, C.H.;
Gene 165, 279-284, 1995
A;Title: Cloning of the rat ErbB3 cDNA and
A;Reference number: JC4387; MUID:96096535;
A;Accession: JC4387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E:640-659/Domain: transmembrane #status predicted <TMM>
F:705-70/Domain: protein kinase homology <KIN>
F:713-721/Region: protein kinase ATP-binding motif
E:939,1051,1156,1194,1196,1219,1257,1259,1273,1286,1325/Binding site:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase c;Keywords: ATP; growth factor receptor; liver; phosphoprotein; transmembrane prote;1-19/Domain: signal sequence #status predicted <SIG>F;10-1339/Product: epidermal growth factor homolog #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     136 FTQLTEILSGGVYIEKNDKLCHMDTIDWRDIVRVR---GAEIVVKNNGANCPPCHEVCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
SGACVPRCPEPLYYNKLTFQLEPNPHTKYQYGGVCVASCPHNFV
                                                                               SGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL 283
                                                                                                                                                                                                                                                                                                                                                                 SRCWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHEDCLACLHFNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AYVLVAMNEFSVLPLPNLRVVRGTQVYDGKFAIFVM-----LNYNT----NSSHALRQLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SQAVCPGTLNGLSVTGDADNQYQTLYKLYEKCEVVMGNLEIVLTGHNADLSFLQWIREVT
                                                                                                                                                                                                                                                   -RCWGPGPDDCQILTKTICAPQCNGRCFGPNPNQCCHDECAGGCSGPQDTDCFACRRFND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 652; DB 2;
Pred. No. 2.6e-40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        characterization PMID:8522190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sierke,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Koland,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the recombinant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nase hom
protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Tyr)
```

A;Reference number: S13807; MUID:91125882; PMID:1846957
A;Acession: S13809 A;Cross-references: EMBL:X16891; NID:g65290; R;Adam, D.; Maeueler, W.; Schartl, M. Oncogene 6, 73-80, 1991 protein-tyrosine kinase (EC 2.7.1.112) mrk-r precursor - southern platyfish Nathernate names: epidermal growth factor receptor homolog; kinase-related C;Species: Xiphophorus maculatus (southern platyfish) C;Date: 10-Sep-1999 #sequence\_revision 10-Sep-1999 #text\_change 18-Feb-2000 A; Status: preliminary; translation D.; Malitschek, B.; Maeueler, W.; receptor eptor tyrosine kinase encoded MUID:90015140; PMID:2797166 not shown PIDN:CAA34770.1; Ьy Raulf, the PID: g65291 F.; Telling, melanoma-inducing 'n transform Xiphoph Robe T'L

PIDN:CAA39763.1;

PID: 965285

bio

non

```
A:Introns: 872/3; 898/1; 947/1; 979/3; 1025/3; 1056/1
C:Superfamily: epidermal growth factor receptor; protein kinase homology C:Keywords: ATP; growth factor receptor; phosphotransferase; transmembran F:1-25/Domain: signal sequence #status predicted <SIG> F:26-1166/Product: kinase-related transforming protein (Tu) #status predicted: F:707-972/Domain: protein kinase homology <KIN> F:715-723/Region: protein kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Gene: mrk
A;Map position: Y
A;Introns: 872/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cell 46, 1091-1101, 1986
Cell 46, 1091-1101, 1986
A;Title: Alternative 5' exons and tissue-specific expression
A;Total Aiternative 5' exons and tissue-specific expression
A;Total Aiternative 5' exons and tissue-specific expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                epidermal growth factor receptor - fruit fly (Drosophila melanogaster) (fragment) (;Species: Drosophila melanogaster C;Date: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 23-May-1997 C;Accession: A27131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
  밁
                            δ
                                                                          В
                                                                                                                                                        ₽
                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: A27131; A; Accession: A27131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Gene: FlyBase:Egfr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 1-843 <SCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Schejter,
                                                                                                                                                                                                                                                                                                                                                                                           :Cross-references: FlyBase:FBgn0003731;Superfamily: epidermal growth factor receptor; protein kinase homology;Keywords: ATP; growth factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                   Matches
215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            144
                                       177
                                                                                                                   117
                                                                                                                                                          111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30
                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                                                                                                                                                                             KVCIGTKSRLSVPSNKEHHYRNLRDRYTNCTYVDGNLKLTWLPNENLDLSFLDNIREVTG 110
                                                                                                                                                                                                                                                         QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPT-NASLSFLQDIQEVQG 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCKDTCPPPKIYDIVSHQVVDNPNIKYTFGAACVKECPSNYVVTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NLTEILSGGVKVSHNPLLCNVETINWWDIVDKTSNPTMNLIPHAFERQCQKCDHGCVNGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KVCQGTSNQMTM----LDNHYLKMKKMYSGCNVVLENLEITYTQENQDLSFLQSIQEVGGY
                                     MCKGSRCWGESSEDCQSLTRTVCAGGCA--RCKGPLPTDCCHEQCAAGCTGPKHSDCLAC 234
                                                                            YTLEIPDLRDVLNGQVGFHNNYNLCHMRTIQWSEIVSNGTDAYYNYDFTAPERECPKCHE
                                                                                                                 RELOCKSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSP 176
                                                                                                                                                          YILISHVDVKKVVFPKLQIIRGRTLFSLSVEEEKYALFV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTD 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CWAPGPGHCQKFTKLLCAEQCNRRCRGPKPIDCCNEHCAGGCTGPRATDCLACRDFNDDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VLIAMNEVSTIPLVNLRLIRGQNLYEGNFTLLVMSNYQK-NPSSP--DVYQVGLKQLQLS
SCTHG-CWGEGPKNCQKFSKLTCSPQCAGGRCYGPKPRECCHLFCAGGCTGPTQKDCIAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126;
                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Segal,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D.; Glazer, L.; Shilo, B.
                                                                                                                                                                                                                                                                                                                                    33.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40;
                                                                                                                                                                                                                                                                                                                 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 640.5; DB 1
Pred. No. 1.6e-39;
                                                                                                                                                                                                                                                                                                                                    Score 536; DB 2;
Pred. No. 5.9e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches 112;
                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                   116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #status predicted <MAT>
                                                                                                                                                          ----TYSKM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the Drosophila
                                                                                                                                                                                                                                                                                                                 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7;
                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                          154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
                                                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tyro
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;anonymous, The C. elegans Sequencing Consortium. Science 282, 2012-2018, 1998
A;Title: Genome sequence of the nematode C. elegans: a platform A;Reference number: A75000; MUID:99069613; PMID:9851916
A;Note: see websites genome.wustl.edu/gsc/C_elegans/ and www_sar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
E88257
A;Reference number: S70712; MUID:96177760; PMID:8604137
                                                                                                 C;Species: Caenorhabditis elegans
C;Date: 21-Apr-1997 #sequence_revision 09-May-1997
C;Accession: S70712; S73101; S13422; T27682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                         R;Sakai, T.; Koga, M.; Ohshima, Y
J. Mol. Biol. 256, 548-555, 1996
A;Title: Genomic structure and 5'
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Map position: 2
C; Superfamily: unassigned
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: D
A; Residues: 1-1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein let-23 [imported] - Caeno
C; Species: Caenorhabditis elegans
                                                                                                                                                          protein-tyrosine kinase (EC 2.7.1.112) let-23 precursor N;Alternate names: receptor tyrosine kinase let-23
                                                                                                                                                                                                  S70712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GB:chr_II; PIDN:CAA93882.1; PID:g3881523; GSPDB:GN00020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: E88257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Species: Caenorhabditis elegans Date: 10-May-2001 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    274 KNEFDEAVSKEECPPMRKYNPTTYVLETNPEGKYAYGATCVKECP-GHLLRDNGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              235
                                                                                                                                                                                                                                                                         319 GNHCVKECP 327
                                                                                                                                                                                                                                                                                                               271
                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             102
                                                                                                                                                                                                                                                                                                                                                    259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      let-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 VCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     published errata appeared in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCY-QDTILWKDIFHKNNQLAL
                                                                                                                                                                                                                                                                                                             GASCVTACP 279
                                                                                                                                                                                                                                                                                                                                                  SYECCDSACLGGCTGHGPKNCIACSKYELDGICIETCPSRKIFNHKTGRLVFNPDGRYQN
                                                                                                                                                                                                                                                                                                                                                                                    PTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTF
                                                                                                                                                                                                                                                                                                                                                                                                                              KVETTNSHQHCYQNGKSMAKCHESC-NDKCWGSGDNDCQRVYRSVCPKSCSQCFYSNSTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LCSGTTNGISRYGTGNI-LEDLETMYRGCRRVYGNLEITWIEANEIKKWRESTNSTVDPK 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NEDSPLKSINFFDNLEEIRGSLIIYRANIQKISFPRLRVIYGDEVFHDN-ALYIHKNDK- 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----ASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDP 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . Similarity
89; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E88257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----VHEVVMRELRVIRNGSVTIQDNPKMCYIGDKIDWKELLYDPD--VQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ser/Thr or Tyr-specific protein kinases;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCSPMCKGSRCWGESSEDCQSLTRTVCAGGCARC---KGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .edu/gsc/C_elegans/ 
in Science 283, 35,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. 1.8e-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 396.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10-мау-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #text_change 24-Aug-2001
                                                                                                                      #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and www_sanger.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                               the
                                                                                                                                                                                Caenorhabditis elegans
                                               let-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1323;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   53;
                                                                                                                        11-Jan-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              289
                                               gene in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ac.uk/Projects/C_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              investigating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                      318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 47
                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                               nemato
```

A; Residues: A; Molecule type: A;Status: nucleic acid sequence not shown

DNA

```
Search completed: April 28, 2003, 13:42:29 
Job time: 17.6321 secs
                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Experimental source: strain N2 R;Koga, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;942-950/Region: protein kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature 348,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Map position: 2
Introns: 44/1; 51/1; 90/1; 112/3; 165/3; 217/1; 290/1; 379/1; 418/1; 448/2; 565/1; 60
Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homol superfamily: unassigned Ser/Thr or Tyr-specific protein; tyrosine-specific protein keywords: ATP; phosphotransferase; transmembrane protein; tyrosine-specific protein keywords: ATP; phosphotransferase; tyrosine-specific protein keyw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Status: preliminary; translated from GB/EMBL/DDBJ Molecule type: DNA :Residues: 52-1374 <WIL>
:Residues: 52-1374 <WIL>
:Cross-references: EMBL:270038; PIDN:CAA93882.1; GSPDB:GN00020; CESP:ZK1067.1
EXperimental source: clone ZK1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 :Title: The let-23 gene necessary for Caenorhabditis elegans vulval induction encodes Reference number: S13422; MUID:91080919; PMID:1979659 Accession: S13422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 25.0%;
Best Local Similarity 28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Experimental source: strain N2
Arolan, R.V.; Koga, M.; Mendel, J.E.; Ohshima, Y.; Sternberg, P.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Reference number: Z20404
Accession: T27682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bmitted to the EMBL Data Library, March 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Molecule type: mRNA
Residues: 52-1374 <ARO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Molecule type: DNA
Residues: 1-50,'G',52-1374 <KOG>
Cross-references: EMBL:D63426; NID:g1407562; PIDN:BAA09729.1; PID:g1407563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1-28/Domain: signal sequence #status predicted <SIG>
29-1374/Product: protein-tyrosine kinase let-23 #status predicted <MAT>
934-1199/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gene: let-23; CESP: ZK1067.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tted to the EMBL Data Library, July 1995 erence number: S73101
                                                                                                                                                                                     370 GNHCVKECP 378
                                                                                                                                                                                                                                                                           271 GASCVTACP 279
                                                                                                                                                                                                                                                                                                                                                                      310 SYECCDSACLGGCTGHGPKNCIACSKYELDGICIETCPSRKIFNHKTGRLVFNPDGRYQN 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   102 LNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCY-QDTILWKDIFHKNNQLAL 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              149 NEDSPLKSINFFDNLEEIRGSLIIYRANIQKISFPRLRVIYGDEVFHDN-ALYIHKNDK- 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       251 KVETTNSHQHCYQNGKSMAKCHESC-NDKCWGSGDNDCQRVYRSVCPKSCSQCFYSNSTS 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90 LCSGTTNGISRYGTGNI-LEDLETMYRGCRRVYGNLEITWIEANEIKKWRESTNSTVDPK 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PTDCCHEOCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTF 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TLIDTNRSRACH-----PCSPMCKGSRCWGESSEDCQSLTRTVCAGGCARC---KGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----ASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDP 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       693-699, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----VHEVVMRELRVIRNGSVTIQDNPKMCYIGDKIDWKELLYDPD--VQ 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 396.5; DB 2; Pred. No. 1.9e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9;
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                800
         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                966.5
958.2
1164.1
1527
145.5
138.5
135.5
135.5
135.5
134.1
130.5
138.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
122.5
123.5
123.5
124.5
124.5
125.5
125.5
126.5
127.5
128.5
129.5
129.5
129.5
129.5
129.5
129.5
129.5
129.5
129.5
129.5
129.5
129.5
129.5
129.5
129.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     %
Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-821-883-25
1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          April 28, 2003, i3:37:23; Search time 4.53595 Seconds (without alignments) 1984.228 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112892 seqs, 41476328 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GAGGMVHHRHRSSSTRSGGG.....STFKGTPTAENPEYLGLDVP 217
    SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length DB
       SFPO_HUMAN
ERBB_ALV
PRP1_HUMAN
ODO2_MYCTU
EXTN_TOBAC
EGFR_MOUSE
SM6B_MOUSE
SM6B_MOUSE
PRP2_HUMAN
IRS2_MOUSE
TEGU_EBV
MAPA_HUMAN
ICP0_HSV11
WAIT_HUMAN
ICP0_BTROME
DNAA_STRCO
EBN4_EBV
APG_BRANA
PRP3_MOUSE
EXLP_TOBAC
VGLG_HSV2H
CC01_CAEEL
YM29_TASEL
YM29_TASEL
YM29_TASEL
YM29_TASEL
YM29_TASEL
YM29_TASEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGFR_HUMAN
ERB4_HUMAN
ERB4_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
    P040534
P040534
P0405381
Q10381
Q10381
Q013983
Q013983
Q049591
P031186
P081559
P081559
P081559
P081559
P08156
P081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P00533
Q15303
Q62956
P23246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Description
                                                                     mus musculu
l mus musculu
l homo sapien
mus musculu
c epstein-bar
homo sapien

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 mesocricetu
4 rattus norv
4 mus musculu
3 homo sapien
5 rattus norv
6 homo sapien
6 rattus norv
6 homo sapien
1 mycobacteri
1 mycobacteri
1 micotiana t
saccharomyc
l orgyia pseu
venopus lae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        homo sapien
```

; CCCCCCCCCRRRRRRRRRRRRRRRRRRRRRRRRRRRR	R R R R R R R R R R R R R R R R R R R	OC RAN	RE RE LER DT DT DT DE DE COS	
100 = 27 <	. TO = 0. Z 0 0. E M Z O Z 0	Eu) Man NCI [1] SEC WEI Yar Yar Sal Ral PSI		33 34 44 44 44 40 40 40 40 40 40 40 40 40 40
VARIANTS VAL-654 AND VAL-655. WEDLINE=93194196: PubMed=8095488; Ehsan1 A., Low J., Wallace R.B., Wu Characterization of a new allele c specific competition hybridization. Genomics 15:426-429(1993)!- FUNCTION: ESSENTIAL COMPONENT C ALTHOUGHY NEUREGULINS DO NOT IN POTENTIAL LICAND FOR THIS RECEP ALPHA AND AMPHIREGULIN!- CATALYTIC ACTIVITY: ATP + a pro tyrosine phosphate!- SUBUNIT: HETERODIMER WITH EACH (POTENTIAL).	EQUENCE FROM N.A.  MEDLINE-86070181; PubMed-2999974;  X MEDLINE-86070181; PubMed-2999974;  Coussens L., Yang-Feng T.L., Liao Y.C., Che McGrath J., Seeburg P.H., Libermann T.A., S. Francke U., Levinson A., Ullrich A.;  "Tyrosine kinase receptor with extensive how the shares chromosomal location with neu oncoge Science 230:1132-1139(1985).  To Science 230:1132-1139(1985).  MEDLINE-86016729; PubMed-2995967;  MEDLINE-86016729; PubMed-2995967;  Semba K., Kamata N., Toyoshima K., Yamamoto R., Verbb-related protooncogene, C-erbB-7, Pubman salivary gland adenocarcinoma.";  Thuan salivary gland adenocarcinoma.";  Proc. Natl. Acad. Sci. U.S.A. 82:6497-6501(	Eukaryota; Metazoa; Chordat Mammalla; Eutheria; Primate NCBI_TAXID=9806; [1] SEQUENCE FROM N:A. MEDLIND=8611863; PubMed=30 Yamamoto T., Ikawa S., Akij Saito T., Toyoshima K.; Saito T. Toyoshima K.; "Similarity of protein ence epidermal growth factor rec Nature 319:230-234(1986).	LHUMAN  ERB2_HUMAN  ERB2_HUMAN  P04626;  13-AUG-1987 (Rel. 05, 13-AUG-1987 (Rel. 05, 13-AUG-1987 (Rel. 05, 15-JUN-2002 (Rel. 41, Receptor protein-tyro; (p185erbB2) (NEU protein-tyro; surface receptor HER2 ERBB2 OR HER2 OR NGL (Homon sapiens (Human).	119 118.5 118 118 118 117.5 117.1 116.5 116.5 116.5
JA1196; A JA1196; A	NM N.A. 70181; Yang- Sebult Levins nase r nosomal :1132-1 :1132-1 :6729; nnata d Acad.	itheria itheria )606; )606; )M N:A. 1868; 1868; 1868; of pro- of p	STA  (Rel. (Rel. (Rel. (Rel. (Rel. (Rel. (Rel. ) CR OR NEU P	99.99 9.88
AND VAL- PubMed= PubMed= Nealing Neali	PubMed PubMed PubMed Pen T Pen T Pen T Pen T Pen T PubMed	PubMed=300: 1 S., Akiyan Na K.; Ntein encode (1986).	STANDARD; PR 1. 05, Created) 1. 05, Last seque 1. 41, Last annot 1-tyrosine kinase 1 proto-oncogene) 2 HER2) (MLN 19). 3 NGL OR NEU. 1man).	960 604 261 419 2167 276 1324 1664 1664 1674 1274 560
-655. -655. -609.54	-29999 Ullri r with ion wi fon wi 85). M N.A29959 OShima ncogar h facer h facer h facer		PRT; eated) st sequenc st annotal e kinase ( e kinase) ncogene) ncogene)	1 PR
A488; B., Wu A.M.; Lele of the lele of the ation."; NENT OF A NEI NOT INTERACT RECEPTOR. NO RECEPTOR. NO RECEPTOR THE LEACH OF THE	d=299974; T.L., Libermann T. , Ullrich A.; , Ullrich A.; , or with extensition with neu cog85).  OM N.A. d=2995967; yoshima K., Yamoncogene, C-erth factor recepencarcinoma."; u.S.A. 82:6497-	th s	PRT; uence otatio se erb e) (C-	FGD1_MOUSE RCO1_NEUCR PRP2_MOUSE SX17_MOUSE SX17_MOUSE SX17_HUMAN SLP1_HUMAN SLP1_HUMAN DIA1_HUMAN DIA1_HUMAN EFS_HUMAN EFS_HUMAN AUTA1_HUMAN AUTA1_HU
Wu A.M.; of the h n."; OF A NEU INTERACT EPTOR. NO PROTEIN TY	Y.C., Chen E. ann T.A., Schle A.; tensive homolo neu oncogene. , Yamamoto T.; cerbB-2, is d receptor gene ana. ;	hini; hini; semba K	T; 1255 AA.  nce update) ation update) c erbB-2 precursor (C-erbB-2) (Tyro	SEE
; ; ; human ER EUREGULIN NOT ACTIV tyrosine E OTHER E e protein	n E. chle	rte Hom	A.  te) ecurso (Tyr	
	Gray singer y to I y to I	יי עו עו עו	Š. C.	
e by OR C GP3 EGF pro	A., J. Enap	teleos omo. , Miya gene t	2.7.1. kinase	P52734 P78706 Q61442 Q61446: C9W446: P10162 Q994h2 Q06852 Q066510 Q664355
B COMPLEX, GR COMPLEX, GEP30 IS A EGF, TGF-protein	receptor	stomi; ojima N	112)	mus neu mus mus rat hon hon hon mus mus
			cell	musculu musculu musculu musculu musculu tus norv to sapien to sapien to sapien to sapien to sapien to sapien to musculu musculu

```
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain: ?
Pfam; PF02757; YLP.
                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP; P11362
Genew; HGNC:
MIM; 164870;
             TRANSMEM
DOMAIN
DOMAIN
DOMAIN
BIND
BINDING
ACT_SITE
DISULFID
                                                                                                                                                                                                                                                      SMART; SM00219; TYING; 1.

PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00109; PROTEIN_KINASE_DOM; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.

PROSITE; PS50011; PROTEIN_KINASE, ATP-BINDING; Rece
                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                            SMART;
                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
    DISULFID
                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                 Polymorphism.
                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE RESIDUES (BY SIMILARITY).

POLYMORPHISM: THERE ARE FOURS ALLELES DUE TO THE VARIATIONS IN POSITIONS 654 AND 655. ALLELE B1 (654-ILE-ILE-655) HAS A FREQUENCY OF 0.782; ALLELE B2 (654-ILE-VAL-655) HAS A FREQUENCY OF 0.206; ALLELE B3 (654-VAL-VAL-655) HAS A FREQUENCY OF 0.012.

SIMILARITY: BELONGS TO THE EGF RECEPTOR PAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ween the Swiss Institute of Bioinfo
European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     A25491; A25491.
A24571; A24571.
; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M11761; AAA35808.1;

M11761; AAA35808.1;

M11762; AAA35808.1;

M11763; AAA35808.1;

M11764; AAA35808.1;

M11765; AAA35808.1;

M11765; AAA35808.1;

M11766; AAA35808.1;

M11730; AAA75493.1;

M11730; AAA75978.1;

M12036; AAA35978.1;

M12036; AAA35978.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through a cen the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                            SM00261; FU; 3.
SM00219; TyrKc; 1.
                                                                                                                                                                                                                                                                                                                                                                            ); IPR000494; EGFR_L_domain.
); IPR000719; Euk_pkinase.
); IPR000174; Futin-1ike.
); IPR001245; Tyr_pkinase.
); IPR004019; YLP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               requires a license agreement (S
an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   non-profit institu
    5444
    ERBB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   institutions as long atement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                              EGFR_L_domain.
Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
POTENTIAL.

CYTOPLASMIC (POT
PROTEIN KINASE
ATP (BY SIMILARITY
BY SIMILARITY
                                                                                                                                                                                                                  POTENTIAL.
RECEPTOR PROTE
                                                                                                                                                                (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e. There are no rest
                                                                                                                                                                                                                  PROTEIN-TYROSINE LULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (See http://www.isb-sib
                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Usage
                                                                                                                                                                                                                                                        Receptor; Signal;
ing; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      restrictions
                                                                                                                                                                                                                             KINASE ERBB-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                collaboration
Coutstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ERB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 216; Conserv
                                                                                                              -i- F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ERB2_MESAU
Q60553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
MOD_RES
                                                                                                                            TISSUE=Nerve;
MEDLINE=94193007; PubMcd=7908275;
Makamura T., Ushijima T., Ishizaka Y.,
Yamazaki Y., Ishikawa T.;
"Cloning and activation of the Syrian l
Gene 140:251-255(1994).
                                                                                                                                                                                                                                                                                                                                                                            15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Receptor protein-tyrosine kinase erbB-2 precursor
(p185erbB2) (NEU proto-oncogene) (C-erbB-2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MESAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1038
                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                           Mesocricetus.
NCBI_TaxID=10036;
                                                                                                                                                                                                                                                                                                                             Mesocricetus auratus (Golden hamster)
Eukaryota; Metazoa; Chordata; Craniat
                                                                                                                                                                                                                                                                                                                                                                   ERBB2 OR NEU.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                            Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P
N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
FUNCTION: ESSENTIAL COMPONENT OF A NEUREGULIN-RECEPTOR COMPLEX, ALTHOUGHT NEUREGULINS DO NOT INTERACT WITH IT ALONE. GP30 IS A POTENTIAL LICAND FOR THIS RECEPTOR. NOT ACTIVATED BY EGF, TGF-ALPHA AND AMPHIREGULIN (BY SIMILARITY).

CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein tyrosine phosphate.

SUBUNIT: HETERODIMER WITH EACH OF THE OTHER ERBB RECEPTORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQFHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1170
1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1248
124
124
187
259
530
571
629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1170
AA; 137909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        576
594
642
642
1139
1139
124
688
1259
530
530
                                                                                                                                                                                                                                                                                                            Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BY SIMILARITY.
BY SIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1177;
Pred. No. 3
                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Cricetinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /FTId-VAR_004078.
P -> A (IN REF. 2).
W; 39E9DFDA04DCF962 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /FTId=VAR_004077.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hamster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GLCNAC. .
                                                                                                                                                                                    Nagao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
.8e-64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         217
                                                                                                                                                                                  .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (AUTO-)
                                                                                                                                                  neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1255;
                                                                                                                                                                                    Arai M.,
                                                                                                                                                                                                                                                                                                                                                                                                       (E)
                                                                                                                                                proto-oncogene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (BY SIMILARITY). (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                       2.7.1.112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

<del>:</del> <del>+</del> <del>+</del> <del>+</del>

SIMILARITY: BELONGS

(POTENTIAL).
SUBCELLULAR LOCATION
PTM: LIGAND-BINDING

LOCATION: Type I membrane protein.
-BINDING INCREASES PHOSPHORYLATION

õ

TYROSINE

```
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                  MOD_RES
MOD_RES
CARBOHYD
                                                                                                                                                                                               DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                        DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                               DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                     DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
NP_BIND
BINDING
                                                                                                                                                                                                                                                                                                                                                                               ACT_SITE DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00261; FU; 3.
SMART; SM00219; TyrKc; 1.
PROSITE; PS00107; PROTEIN_KINASE_
PROSITE; PS00109; PROTEIN_KINASE_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pfam; PF00069; pkinase; 1.
pfam; PF00757; Furin-like; 1.
pfam; PF01030; Recep_L_domain; 2.
pfam; PF02757; YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002174; Furin-like.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR004019; YLp_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a license of the statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This
                                                                                                                              DISULFID
                                                                                                                                           DISULFID
                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Proto-oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR000719; Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through a collaboration sen the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D16295; BAA03801.1; -. P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            s requires a license agreement (See http://www.isb-sib
an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PS00107; PROTEIN_KINASE_ATP; 1.
PS00109; PROTEIN_KINASE_TYR; 1.
PS50011; PROTEIN_KINASE_DOM; 1.
  1247
68
125
187
259
530
571
629
                                                                                                                                           e; Glycoprotein; Multigene Tyrosine-protein kinase; #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disease
  TO THE EGF RECEPTOR FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mutation
ATP (BY SIMILARITY)
BY SIMILARITY
BY SIMILARITARITY
BY SIMILARITY
BY SIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYTOPLASMIC (POTENTIAL).
CYS-RICH.
CYS-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RECEPTOR PROTEIN-TYROSINE EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN KINASE
ATP (BY SIMILA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kinase;
                                                                                                                                                                                                                                                                                                                                                                                                         (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e family; Receptor; Signal;
ATP-binding; Phosphorylation;
                                                                                               (AUTO-)
                                                                                                            (AUTO-)
                                                       (POTENTIAL). (POTENTIAL). (POTENTIAL).
              (POTENTIAL)
(POTENTIAL)
  (POTENTIAL)
                                                                                               (BY SIMILARITY).
(BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KINASE ERBB-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      no
```

÷

membrane protein ONCOGENIC VARIANT

FORMS

A HOMODIMER

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-JUN-2002 (Rel. 37, Last sequence update)
Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)
(p185erbB2) (NEU proto-oncogene) (C-erbB-2) (Epidermal growth faceceptor-related protein).
ERBB2 NEU.
Ratting page 137, Last sequence update)
                                                                           oncogenic and oncogenic forms of the new protein.";
EMBO J. 11:43-48(1992),
-I- FUNCTION: ESSENTIAL COMPONENT OF A NEWREGULIN-RECEPTOR ALTHOUGHT NEUREGULINS DO NOT INTERACT WITH IT ALONE. GP POTENTIAL LIGAND FOR THIS RECEPTOR. NOT ACTIVATED BY EGALPHA AND AMPHIREGULIN.
-I- CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + AD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ERB2_RAT P06494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANT
VARIANT
                                                                                                                                                                                                                     STRUCTURE BY NMR OF 650-668.
MEDLINS-92155181; PubMed-1346763;
Gullick W.J., Bottomley A.C., Lofts F.J., Doak D.G.,
Newman R., Crumpton M.J., Sternberg M.J.E., Campbell
"Three dimensional structure of the transmembrane reg
                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-Sciatic ne
MEDLINE-91222560;
Lai C., Lemke G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=Neuroblastoma;
MEDLINE=86118662; PubMed=3945311;
Bargmann C.I., Hung M.-C., Weinberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1038
                                                                                                                                                                                                                                                                                                                                              "An extended family of protein-tyrosine kinase genes expressed in the vertebrate nervous system."; Neuron 6:691-704(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                       +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "The neu oncogene encodes protein.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _
tyrosine phosphate.
SUBURIT: HETERODIMER WITH EACH OF THE OTHER
THE CONSTITUTIVELY ACTIVATED ONCOGENIC VARIA
SUBCELLULAR LOCATION: Type I membrane protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNLYYWDQDPSERGSPPNTFEGTPTAENPEYLGLDVP 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          al Similarity
178; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         319:226-230(1986)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        658
659
1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 852-905 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                 nerve;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA,
                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=2025425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             81.8%;
82.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          138252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               an epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 966.5; DB 1;
Pred. No. 1.8e-51;
3; Mismatches 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               < <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      > E (IN ONCOGENIC
> E (IN ONCOGENIC
974C3791C21F2BE1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 factor
                                         ERBB RECEPTORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NEU).
CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                       region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                               ADP + protein
                                                                                                                                                                                                                                          Mulvey
                                                                                                                                                                                                                                                                                                                                                                                      differentially
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               receptor-related
                                                                                                                         GP30
                                                                                                                                                                                                                           of.
                                                                                                                                                              COMPLEX,
                                                                                                                                                                                                                         the proto-
                                                                                                                                                                                                                                                                 D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۲.
                                                                                                                         IS A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
```

```
DOMAIN
DOMAIN
NP_BIND
BINDING
BINDING
BINDING
DISULFID
                             CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SMART; SM00261; FU; 3.

SMART; SM00261; TyrKc; 1.

SMART; SM00219; TyrKc; 1.

PROSITE; PS00109; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00109; PROTEIN_KINASE_DOM; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.

Transmembrane; Glycoprotein; Multigene family;

Transmembrane; Glycoprotein kinase; ATP-bind;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the European as tony use by non-profit institutions as tony use by non-profit institutions as tony modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                 DISULFID
                                                                                                                                             DISULFID
                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam;
Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This
                                                                                                  MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Proto-oncogene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                      MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        s SWISS-PROT entry is copyright. It is produced through a ween the Swiss Institute of Bioinformatics and the EMBI European Bioinformatics Institute. There are no restrice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION RESIDUES (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , X03362; CAA27059.1;
A24562; TVRTNU.
; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PF00757;
PF01030;
PF02757;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR001245; Tyr_pkinase. IPR004019; YLP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR002174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR000494;
IPR000719;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Furin-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BELONGS TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euk_pkinase.
Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EGFR_L_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALT_INIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 THE
ATP (BY SIMILARITY ATP (BY SIMILARITY BY SIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EXTRACELLULAR POTENTIAL. CYTOPLASMIC (P
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Multigene family; Receptor; kinase; ATP-binding; Phosp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGF RECEPTOR FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                (BY SIMILARITY).
GLCNAC...
GGLCNAC...
GGLCNAC...
GGLCNAC...
GGLCNAC...
GGLCNAC...
GGLCNAC...
                                                                                                                                                                                                                                                                                                                                                                                                                                                               KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROTEIN-TYROSINE LULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nere are no rest
as its content
                                                                                (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      eptor; Signal;
Phosphorylation;
             (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                      (POTENTIAL)
                                                                                     (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYROSINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KINASE ERBB-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
```

```
SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity Matches 177; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VARIANT
SEQUENCE
                                                                                                                                                                                                                                                                                                                          MEDLINE-96069911; Pubmed-7589796; MOSCOSO L.M., Chu G.C., Gautam M. Sanes J.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P70424; Q61525;
15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation.update)
15-JUN-2002 (Rel. 41, Last annotation.update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1040
                                                                                                                                                                                                                                                                   "Synapse-associated expression of protein, ARLA/heregulin, and its in developing mammalian muscle.", Dev. Biol. 172:158-169(1995).
                                                                                                                                                                                                                                                                                                                                                                                                           mouse uterus: potential mediator o factor-like growth factors."; Endocrinology 138:1328-1337(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 1-149 FROM N.A.
STRAIN-CD-1; TISSUE-Uterus;
MEDLINE-97200814; Pubm6d-9048643;
Lim J., Dey S.K., Das S.K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus (Mouse
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (NEU proto-oncogene) (C-erbB-2) ERBB2 OR NEU.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID-10090
                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Differential expression of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                        BIOL. 172:158-169(1995).

FUNCTION: ESSENTIAL COMPONENT OF A NEUREGULIN-RECEPTOR COMPISIONENT NEUREGULINS DO NOT INTERACT WITH IT ALONE. GP30 POTENTIAL LIGAND FOR THIS RECEPTOR. NOT ACTIVATED BY EGF, ALPHA AND AMPHIREGULIN.

CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + prote tyrosine phosphate.
                                                                            SUBCELLULAR LOCATION:
TISSUE SPECIFICITY: EX
CELLS: IN THE MUSCLE,
OF MUSCLE FIBERS.
DEVELOPMENTAL STAGE: ON DAYS 1-4 OF PREGNANCY, ERBB2 IS PRIMARILY IN EPITHELIAL CELLS, THE DAY I UTERUS SHOWING HIGHEST ACCUMULATION. ON DAY 5, THE EPITHELIUM AND THE DECIDUALIZING STROWAL CELLS AROUND THE IMPLANTING BLASS EXHIBIT ACCUMULATION OF THIS RECEPTOR. ON DAYS 6-8, THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ESDOW
                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGSTAHRRHRSSSTRSGGGELTLGLEPSEEGPPRSPLAPSEGAGSDVFDGDLAMGVTKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PPVRPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLVPREGTASPPHPSPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80.7%;
81.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   138831
                                                                                          N: Type I membrane protein.
EXPRESSED PREDOMINANTLY IN UTERINE EPITHELIALE, EXPRESSION LOCALIZES TO THE SYNAPTIC SITES
                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₩
\
'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Ver
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                   of an acetylcholine receptor-inducing ts putative receptors, ErbB2 and ErbB3.
                                                                                                                                                                                                                                                                                                                                                  .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    v
                                                                                                                                                                                                                                                                                                                                                                                                                                                             erbB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Fragments).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                             of.
                                                                                                                                                                                                                                                                                                  putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   > E (IN ONCOGENIC
6129264583011402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  954;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ.
                                                                                                                                                                                                                                                                                                                                                  Noakes
                                                                                                                                                                                                                                                                                                                                                                                                                                            B2 gene in signaling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     le-50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vertebrata;
thi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3
                                                                                                                                                                                                                                                                                                                                               P.G., Merlie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.7.1.112) (p185erb82)
                                                                                                                                                                                                                                                                                                                                                                                                                                            the periimplantation by epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NEU).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                             ERBB2 IS
                                                                                                                                                                                       ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
; Murinae; Mus
                BLASTOCY
                                                                                                                                                                                                                                                                                                                                                  J.P.,
                                                                                                                                                                                                                       R COMPLEX,
GP30 IS A
EGF, TGF-
                                                DETECTED
THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . . . . . . . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

THE

gene

in

A431 epidermoid

carcinoma

cells.";

```
В
                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                Matches
[1]
SEQUENCE FROM N.A. (ISOFORM 1).
MEDLINE-84219729; PubMed-6328312;
Ullrich A., Coussens L., Hayfilck J.S., Dull T.J., Gray A.,
Lee J., Yarden Y., Libermann T.A., Schlessinger J., Downwark
Lee J., Watterfield M.D., Seeburg P.H.;
                                                                                                                          EGFR_HUMAN STANDARD; PRT; 1210 AA.

P00533; P06268; Q14225; Q9UMD7; Q9UMD8; Q9UMG5; Q92795; 000732;
000688; Q9B828; Q9H2C9; Q9GXXI; Q9H3C9;
21-JUL-1986 (Rel. 01, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Epidermal growth factor receptor precursor (EC 2.7.1.112) (Receptor creating tyrosine kinase ErbB-1).
                                                                                                                                                                                                                    HUMAN
                                                                                      Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE: PS00107; PROTEIN_KINASE_ATP; PROSITE; PS00109; PROTEIN_KINASE_TYR; PROSITE; PS50011; PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000719; Euk_pkinase.
InterPro; IPR004040; STY_pkinase.
InterPro; IPR001245; Tyr_pkinase.
PRINTS; PR00109; TYRKINASE.
ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00221; STYKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; U71126; AAB17380.1; -. EMBL; L47239; AAA93532.1; -. HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tyrosine-protein kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Transmembrane;
                                                                                                                                                                                                                                                                                                      177
                                                                                                                                                                                                                                                              237
                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                           ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESIDUES (BY SIMILARITY).
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PERSISTS IN THE EPITHELIUM AT BOTH THE IMPLANTATION AND INTERIMPLANTATION SITES IN ADDITION TO MODEST LEVELS IN THE SECONDARY DECIDIAL ZONE. ON DAYS 7 AND 8, ACCUMULATION IS PROMINENT IN THE TROPHOBLASTIC GIANT CELLS.

PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE
                                                                                                                                                                                                                                                                                                    OR ERBB1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MGI:95410; Erbb2.
                                                                                                                                                                                                                                                                               LOSLPTHD
                                                                                                                                                                                                                                                           LQSLSPHD
                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                         245
                                                                                                                                                                                                                                                                                                                                                                                                   <1
61
149
245
                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                   11; PROTEIN_KINASE_DOM; 1.
Glycoprotein; Multigene family; Receptor;
in kinase; ATP-binding; Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                         Α
,
                                                                                                                                                                                                                                                                                                                                                                                                    >149
61
150
245
                                                                                                                                                                                                                                                                                                                                                        23.9%;
                                                                                                                                                                                                                                                                                                                                                                                         26927 MW;
                                                                                                                                                                                                                                                                                                                                              Score 283; DB 1; |
Pred. No. 6.2e-11;
2; Mismatches 12;
                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN KINASE.
BY SIMILARITY.
                                                                                        Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
     receptor cDNA sequence and aberrant
                                                                                                                                                                                                                                                                                                                                                                                        0F763F0363DFEF1C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PARTIAL
                                                                                                                                        2.7.1.112) (Receptor
                                                                                                                                                                                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                               Indels
                         Downward
                                                                                                                                                                                                                                                                                                                                                                   245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 THE
                                  Tam A.W.,
                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALSO
                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                               0
     receptor Biochem.
                                                                                                                                                                                                                                                                                                                         Reiter J.
Lampland
Maihle N.
                                                                  MEDLINE-85046483;
Simmen F.A., Gope
                                                       O'Malley B.W.;
                                                                                                                                                                                                       cells."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               expression of the amplified Nature 309:418-425(1984).
     SEQUENCE
                                              "Isolation
                                                                                        SEQUENCE
                                                                                                                                                                                             Science
                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                            Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Placent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-95382957;
                                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                                                                                        isoforms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-97078686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ISSUE-Placenta;
                                  CDNA
     OF 1-29
```

```
MEDLINE-84196372; PubMed-6326261;
Lin C.R., Chen W.S., Kruiger W., Stolarsky L.S., Weber W.,
Evans R.M., Verma I.M., Gill G.N., Rosenfeld M.G.;
"Expression cloning of human EGF receptor complementary.DNA:
amplification and three related messenger RNA products in A43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-97256547; pubMed-9103388; Ilekis J.V., Gariti J., Niederberger "Expression of a truncated epidermal protein (TEGFR) in ovarian cancer."; Gynecol. Oncol. 65:36-41(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ilekis J.V., Stark B.C., Scoccia B.; "Possible role of variant RNA transcripts in the regulation epidermal growth factor receptor expression in human placent Mol. Reprod. Dev. 41:149-156(1995).
                                                                                                                                                                                                                                                   SEQUENCE OF 150-962 FROM N.A.
MEDLINE-84245835; PubMed-633563;
MIDELINE-84245835; PubMed-635563;
XU Y. H., Ishi1 S., Clark A.J.L., Sullivan M., Wilson
Roe B.A., Merlino G.T., Pastan I.;
"Human epidermal growth factor receptor cDNA is homol
"Human epidermal growth factor receptor cDNA is homol
variety of RNAs overproduced in A431 carcinoma cells.
Nature 309:806-810(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          extracellular domain of Submitted (FEB-1999) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Reiter J.L., Threadgill D.W., Eley G.D., Sti
Schehl Sinclair C., Pearsall R.S., Green P.G
Balasubramaniam S., Crossley T.D., Magnuson
Maihle N.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 575-687 FROM N.A. Reiter J.L., Threadgill D.W., Danielsen A.J., Lampland A.L., Balasubramaniam S., Crossley T. Maihle N.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "A 1.8 kb alternative transcript from the human epidermal "A 1.8 kb alternative transcript from the human epidermal factor receptor gene encodes a truncated form of the recep Nucleic Acids Res. 24:4050-4056(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Human and mouse alternative EGFR transcripts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Comparative genomic sequence analysis and isolation of human and mouse alternative EGFR transcripts encoding truncated receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. (ISOFORM 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-21100872; PubMed-11161793;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            224:843-848(1984).
                                                                                                                                                                                                        OF 1028-1210 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OF 713-924 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71:1-20(2001).
                                                                     of an evolutionarily conserved epidermal DNA from human A431 carcinoma cells.";
                                                                                                                                     6093780;
Gope M.L., Schulz T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N.A. (ISOFORMS 3 AND
FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed-8918811;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=7654368;
N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the receptor.";
the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>بر</u>
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ی
.
                                                                                                                                                     T.Z.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>4</u>
ن
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C., Scoccia B.; growth factor r
                                                                                                                                                   Wright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Strunk K.E., Danielsen
P.J., Yee D., Lampland
son T.R., James C.D.,
                                                                                                                                                   D.A.,
                                                                                                                                                                                                                                                                                                      is homologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . Schehl C.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   encoding only
                                                                                                                                                     Carpenter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Magnuson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     receptor-like
                                                                                                growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ermal growth receptor.";
                                                                                                                                                                                                                                                                                                                                                         R.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         placenta.";
                                                                                                                                                                                                                                                                                                                                                            Ma
                                                                                                   factor
                                                                                                                                                                                                                                                                                                         б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                     ر.
ن
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of.
                                                                                                                                                                                                                                                                                                                                                            D.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A.J.,
                                                                                                                                                                                                                                ÷.
```

```
O"The human EGF receptor gene: structure of
didentification of sequences regulating its
Oncogene Res. 1:375-396(1987).
   "Recept.";
mitogens.";
Pev. Biochem.
                                                                                                                                           PARTIAL SEQUENCE, AND DISULFIDE BONDS.
MEDILNE-9825196; PubMed-9556602;
Abe Y., Odaka M., Inagaki F., Lax I., Schless
"Disulfide bond structure of human epidermal
J. Biol. Chem. 273:11150-11157(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Margolis B.L., Lax I., Kris R., Dombalagian M., Honegger A.M., Howk R., Givol D., Ullrich A., Schlessinger J.;
"All autophosphorylation sites of epidermal growth factor (EGF) receptor and HER2/neu are located in their carboxyl-terminal tails. Identification of a novel site in EGF receptor.";
Biol. Chem. 264:10667-10671(1989).
                                                                                                                                                                                                                                                                                                               Sato C., Kim J.-H., Abe Y., Saito K., Yokoyama S., Ko "Characterization of the N-oligosaccharides attached
                                                                                                                                                                                                                                                                                                                                                                                                                                           the epidermal growth factor ovary fibroblasts.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Analysis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mroczkowski B., "ATP-stimulated and supercoiled
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-84191554; PubMed-6325948; Mroczkowski B., Mosig G., Cohen S.; "ATP-stimulated interaction between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            epidermal growth Proc. Natl. Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Contributory effects of de novo transcription and premature transcript termination in the regulation of human epidermal (factor receptor proto-oncogene RNA synthesis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 1-29 FROM N.A. MEDLINE-91107677; PubMed-1988448;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-88217333; Pu
Haley J.D., Whittle
Waterfield M.D.;
                                                                        Carpenter G.;
                                                                                                                                                                                                                                                                                                                                                                                                                           Growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-96398132; PubMed-8962717;
Smith K.D., Davies M.J., Bailey D
"Analysis of the glycosylation pa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF
                                                                                           MEDLINE-87297456;
                                                                                                                REVIEW.
                                                                                                                                                                                                                                                                                            Asn-X-Cys sequence
                                                                                                                                                                                                                                                                                                                                                   MEDLINE-20198209; PubMed-10731668;
                                                                                                                                                                                                                                                                                                                                                                        ASN-603
                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYDRATE-LINKAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYDRATE-LINKAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RECEPTOR ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-85270438; PubMed-2991899;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 1-29 FROM N.A.
                                                   Receptors for epidermal growth factor
                                                                                                                                                                                                                                                                              receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=89278137; PubMed=2543678;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     [shii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Stor receptor proto-oncogene RNA synthesis Biol. Chem. 266:1746-1753(1991).
                                                                                                                                                                                                                                                           Biochem. 127:65-72(2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S., Xu Y.H., Stratton R.H., Roe B.A., Merli acterization and sequence of the promoter rermal growth factor receptor gene.";
Natl. Acad. Sci. U.S.A. 82:4920-4924(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J.D., Waterfield M.D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          309:270-273(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (SEP-1997)
 Receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , Mosig G., Co
d interaction
d DNA.";
                                                                                                                                                                                                                                                                                                                                                                                                                         13:121-132(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PubMed=3329716;
le N., Bennett P.,
                                                                                           PubMed=3039909
                                                                                                                                                                                                                                                                                             of recombinant human
 56:881-914(1987).
tor for EGF, but a
                                                                                                                                                                                                                                                                                                                                                                                       SITES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SITES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ទ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the
                                                                                                                                                                                                                                                                                                                                                                                     ASN-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASN-128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SWISS-PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               patterns
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D.,
                                                                                                                                                                                                                                                                                                                                                                                   ASN-352;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Renouf D.V.,
erns of the ex
r expressed in
also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASN-175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kinchington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B.A., Merlino G.T., promoter region of t
                                                                                                                                                              Schlessinger a
                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      data
                                                                                                                                                                                                                                                                                            epidermal
for
                                                       other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the 110 kb locus transcription.";
                                                                                                                                                                                                                                                                                                                                                                                     ASN-361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bank
other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASN-413;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                            extracellular doma in Chinese hamster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             D.,
                                                     polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hounsell
                                                                                                                                                                                                                                                                                            growth
                                                                                                                                              J., Konaa ..,
h factor receptor.";
members
                                                                                                                                                                                                                                                                                                                                Kohda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ullrich
                                                                                                                                                                                                                                                                                                               ៥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            factor receptor
                                                                                                                                                                                                                                                                                                                                                                                     ASN-568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASN-444
                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                             factor
                                                                                                                                                                                                                                                                                                                                    O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pastan
of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                               atypical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nstan I.;
human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Α.,
                                                                                                                                                                                                                                                                                                                                                                                       ANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             domain
the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ANIC
EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of.
```

SEQUENCE FROM TISSUE-Breast

N.A. (ISO

(ISOFORM JM-A)

Eukaryota; Metazoa; Mammalia; Eutheria;

Chordata; Primates;

Craniata; Vertebrata; Catarrhini; Hominidae;

Hominidae;

Euteleostomi;

receptor

HER4)

(EC

Homo sapiens ERBB4 OR HER4.

(Human)

```
RRN OCC GREET
                                                                                                                                                                                            RESULT 6
ERB4_HUMAN
                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 62
                                                                                                  15-DEC-1998 (Rel. 37, Created)
1.5-DEC-1998 (Rel. 37, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Receptor protein-tyrosine kinase erbB-4 precursor
(p180erbB4) (Tyrosine kinase-type cell surface rec
                                                                                                                                                                                                                                                1177
                                                                                                                                                                                                                                                                                                 1128
                                                                                                                                                                                                                                                                                                                                                                                                      1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                use by non-profit modified and this st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This
                                                                                                                                                                                                                                                                                                                                                   1083
                                                                                                                                                                                ERB4_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              between
                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                         147
                                                                                                                                                                                                                                                                                                                                                                            88
                                                                                                                                                                                                                                                                                                                                                                                                                              29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alternative splicing.
TISSUE SPECIFICITY: Expressed in placenta. Isoform 2 is al expressed in ovarian cancers.
MISCELLANEOUS: Binding of EGF to the receptor leads to dimerization, internalization of the EGF-receptor complex, induction of the tyrosine kinase activity, stimulation of synthesis, and cell proliferation.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   European Bioinformatics Institute. The by non-profit institutions as long ified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 family, as TGF-alpha, amphiregulin, betacellulin, heparin-bindi EGF-like growth factor, Gp30 and vaccinia virus growth factor. involved in the control of cell growth and differentiation. FUNCTION: Isoform 2/truncated isoform may act as an antagonist. CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tyrosine phosphate.
SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      truncated isoform/TEGFR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              secreted
                                                                                                                                                                                                                                            -PERGAPPSTFKGTPTAENPEYL
|: | ||: ||| |||
FPKEAKPNGIFKGS-TAENAEYL
                                                                                                                                                                                                                                                                                                                 VFAFGGAVENPEYL-TPQGGAAPQPHPPPAFSPAFDNLYYWDQ------DP-----
                                                                                                                                                                                                                                                                                                                                                                                                                     SEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSET-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS-PROT entry is copyright. It is produced the swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                                                                                   DDTFL-----PVPEYINQ-SVPKRPAGSVQNPVYHNQPLNP------
                                                                                                                                                                                                                                                                                                                                                                  -DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKD
| :: | | | | | : | : : : : |
                                                                                                                                                                                                                                                                                                                                                                                                     SSPSTSRTPLLSSLSATSN--NSTVACIDRNGLQSCPIKEDSFLQRYSSDPTGALTEDSI 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X00588;
U95089;
U48722;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        U48725;
U48726;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  U48724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      62; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAA25240.1;
AAB53063.1;
AAC50802.1;
AAC50804.1;
AAC50796.1;
AAC50797.1;
AAC50798.1;
                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Type I membrane protein. Isoform 2 is
                                                                                                                                                                                                                                                                                                                                                                                                                                                      24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 164; DB
Pred. No. 0.00
24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   isoforms;
                                                                                                                                                                                                                                               1198
                                                                                                                                                                                                                                                                      212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3/p110
                                                                                                                                                                                                                                                                                                PTCVNSTFDSPAHWAQKGSHQISLDNPDYQQDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      It is produced through
                                                                                                                                                                                1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1/p170
nd 4; ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
                                                                                                                                                                                ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      are
                                                                                                                                                                                                                                                                                                                                                                                                                                                        69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      produced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    here),
uced by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Уď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         heparin-binding rowth factor. Is
                                                                                                                                                                                                                                                                                                                                                   APSRDPHYQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         commerc
                                                                                                                                                                                                                                                                                                                                                   1127
                                                                                                                                                                                                                                                                                                                           190
                                                                                                                                                                                                                                                                                                                                                                              146
                                                                                                                                                                                                                                                                                                                                                                                                                               87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               on ; its
```

Plowman G

MEDLINE-93189574; PubMed-8383326;

G.D., Culouscou J.-M., Whitney G.S.,
Neubauer M.G., Shoyab M.;

Green J.M.,

Carlton

G.W.,

fourth member of the

```
SMART; SM
SMART; SM
PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                              entities
or send a
                                                                                                         PROSITE;
                                                                                                                                                                                pfam; PF00069; pkinase; 1.
pfam; PF000757; Furin-like; 1.
pfam; PF01030; Recep_t_domain;
pfam; PF02757; YLP; 2.
proDom; PD000001; Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Ligand-specific activation of HER4/p180erbB4, a epidermal growth factor receptor family."; Proc. Natl. Acad. Sci. U.S.A. 90:1746-1750(1993).
               CHAIN
DOMAIN
                                                                                                                                                                                                                                                           InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-11ke.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR004019; YLP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute. The use by non-profit institutions as modified and this statement is not removed. entities requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Elenius K.,
Klagsbrun M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE-Fetal brain; MEDLINE-97476287; P
 TRANSMEM
                                             SIGNAL 1
                                                                                           Transmembrane;
                                                                                                                                                                                                                                                                                                                                                     Genew;
                                                                                                                                                                                                                                                                                                                                                                   EMBL; L07868; AAB59446.1; -. HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      phorbol ester.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tissue distribution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM
                                                                om; pD000000; 14.
IT; SM00261; FU; 4.
XT; SM00219; TYTKC; 1.
SITE; PS00109; PROTEIN_KINASE_TYR; 1.
SITE; PS00119; PROTEIN_KINASE_DOM; 1.
SSITE; PS50011; PROTEIN_KINASE_DOM; 1.
SSITE; PS50011; PROTEIN_KINASE_TOM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: Type I membrane protein.

ALTERNATIVE PRODUCTS: 2 ISOFORMS; JM-A (SHOWN HERE) AND JM-B;
ARE PRODUCED BY ALTERNATIVE SPLICING. THE TWO ISOFORMS DIFFER
FUNCTIONALLY IN THEIR RESPONSE TO PHORBOL ESTER: JM-A IS PROCESSED
BUT NOT JM-B. SO, THEY RESPECTIVELY REPRESENT CLEAVABLE AND
NONCLEAVABLE FORMS OF THE RECEPTOR. BOTH ISOFORMS ARE EXPRESSED IN
CEREBELLUM, BUT ONLY THE JM-B ISOFORM IS EXPRESSED IN THE HEART.
TISSUE SPECIFICITY: EXPRESSED AT HIGHEST LEVELS IN BRAIN, HEART,
KIDNEY, IN ADDITION TO SKELETAL MUSCLE, PARATHYROLD, CEREBELLUM,
PITUITARY, SPLEEN, TESTIS AND BREAST. LOWER LEVELS IN THYMUS,
LUNG, SALIVARY GLAND, AND PANCREAS.

LUNG, SALIVARY GLAND, AND PANCREAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PTM: LIG.
RESIDUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3101. Chem. 272:26761-26768(1997).
FUNCTION: SPECIFICALLY BINDS AND SOME RECORD BY NEUROTION: SPECIFICALLY BINDS GEF-LIKE GROWTH FACTOR, 2, NRG-3, HEPARIN-BINDING EGF-LIKE GROWTH FACTOR, NTAK. INTERACTION WITH THESE FACTORS INDUCES CELL NOT ACTIVATED BY EGF, TGF-A, AND AMPHIREGULIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tyrosine phosphate.
SUBUNIT: HOMODIMER OR HETERODIMER WITH EACH OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOT ACTIVATED BY EGF, TGF-A, AND AMPHIREGULIN. CATALYTIC ACTIVITY: ATP + a protein tyrosine -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RECEPTORS (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                        600543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through a collaboration sen the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                   HGNC: 3432;
                                                                                                                                                                                                                                                                                                                                                                                                               an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    juxtamembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Corfas G.,
26
26
652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N.A. (ISOFORMS JM-A AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=9334263;
 25
1308
651
675
                                                                                                                                                                                                                                                                                                                                                   ERBB4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ane domain isoform of HER4/ErbB4. Isoform-specific and differential processing in response to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               s
,
              POTENTIAL.

RECEPTOR PROTEIN-TYROSINE KINASE ERBB-4
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Choi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C.J., Rio C.,
                                                                  1.
1.
1.
1.
1.
1. Receptor; Signal;
ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ЈМ-В)
                                                                                                                                                                                                                                                                                                                                                                                                                                                        There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                             http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plowman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADP
                                                                                                                                                                                                                                                                                                                                                                                                                                             γg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NEUREGULINS, NRG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER ERBB
                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G
                                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                               commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                      ,
```

```
Ş
                        В
                                    Ş
                                                 В
                                                            δÃ
                                                                          DЬ
                                                                                     Q
                                                                                                  В
                                                                                                             Š
                                                                                                                                                   В
                                                                                                                                Query Match
Best Local
                                                                                                                           Matches
                                                                                                                                                                                             CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                        DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                     MOD_RES
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                         DISULFID DISULFID DISULFID DISULFID DISULFID MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
DOMAIN
DOMAIN
                                                                          1127
                                                                                                   1067
1270
                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                             MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                      BINDING
                                                                                                                                                                                                                                                    MOD_RES
                        210
                                     176
                                                              127
                                                                                       74
                                                                                                              16
QNGRIRPIVAENPEYL 1285
                                                             GATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPA--
                                                                          RYSADPTVFAPERSPRGELDEEGYMTPMRDKPKQEYLNPVE-----ENPFVSRR--
                                                                                 RYSEDPTVPLPS-----ETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPA 126
                                                                                                  RDGGFAAEQGVSVPYRAPTSTIPEAPVAQGATAEIFDDSCCNGTLRKPVAPHVQEDSSTQ 1126
                                                                                                          RSGGGDLTLGLE-PSEEEAPRSPLAP-SEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQ
                        NTFANTLGKAEYLKNNILSMPEKAKKAFDNPDYWNHSLPPRSTLQHPDYLQEYSTKYFYK
                                                                                                                          62; Conservative
             ---- AENPEYL 212
                                                                                                                                                   1308
                                                                                                                                                                                                                                                                            AΑ;
                                                 -KNGDLQ-----
                                                                                                                                                               13.3%;
                                                                                                                                                   146807
                                     ----FSPAFDNLYYWDQDPPERGA--PPSTFKGTPT----
                                                                                                                           23;
                                                                                                                                                                                                                                                               ¥.
                                                                                                                                                                                                                                       BY SIMILARITY.
BY SIMILARITON
PHOSPHORYLATION
PHOSPHORYLATION
PHOSPHORYLATION
                                                                                                                         Score 157; DB
Pred. No. 0.01
23; Mismatches
                                                                                                                                                                                             N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                        CYS-RICH.
CYS-RICH.
                                                                                                                                                                                 N-LINKED
                                                                                                                                                         î
                                                                                                                                                               N-LINKED (GLCNAC...)
NGPTSHDCIYYPWTGHSTLPQHA
                                                                                                                                                                           N-LINKED
                                                                                                                                                                                                                                                                                                                                 Y SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                  ALDNPEYHNASNG----
                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                     TEIN KINASE.
(BY SIMILARITY).
(BY SIMILARITY).
                                                                                                                                                   5E4AE80985D88761
                                                                                                                                                          ISOFORM
                                                                                                                                                                                (GLCNAC. .
                                                                                                                                DB 1
                                                                                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL).
                                                                                                                                      ۲.
                                                                                                                                                                                                                                       (AUTO-)
(AUTO-)
(AUTO-)
(AUTO-)
                                                                                                                           75;
                                                                                                                                      Length 1308;
                                                  -PPKAEDEYVNEPLYL
                                                                                                                                                   CRC64;
                                                                                                                           Indels
                                                                                                                                                                                       (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                      (POTENTIAL).
                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                           (POTENTIAL).
                                                                                                                                                                v
                                                                                                                                                                                                                                        48 (9 kg)
                                                                                                                                                                                                                                       Y SIMILARITY).
Y SIMILARITY).
Y SIMILARITY).
Y SIMILARITY).
                                                                                                                                                               IGSSIEDCIGLMD
                                                                                                                           96;
                                                                                                                           Gaps
                                                  1209
                                                                           1175
                                                              175
                                                                                                                                                                                                    • •
                                                                                                                           10;
```

```
THE PROPERTY OF A PROPERTY OF 
                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by ancentities requires a license agreement (See http://www.isb-sentities.
                                                                                                                                            EMBL;
HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ErbB3, is induced during Wallerian degeneration.";

J. Neurosci. 17:1642-1659(1997).

-I. FUNCTION: SPECIFICALLY BINDS AND IS ACTIVATED BY NEUREGULINS, NRG-1, NRG-3, HEBARIN-BINDING EGF-LIKE GROWTH FACTOR, BETACELLULIN AND NTAK. INTERACTION WITH THESE FACTORS INDUCES CELL DIFFERENCIATION.

NOT ACTIVATED BY EGF, TGF-A, AND AMPHIREGULIN (BY SIMILARITY).

-I. CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zhao Y.-Y. Sawyer D.R., Baliga R.R., Opel Marchionni M.A., Kelly R.A.;
"Neuregulins promote survival and growth or Persistence of ErbB2 and ErbB4 expression ventricular myocytes.",
J. Biol. Chem. 273:10261-10269(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q62956; Q9Z2N7;
15-DEC-1998 (Rel. 37, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Receptor protein-tyrosine kinase erbB-4 precursor
ERBB4 OR TYRO-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ERB4_RAT
Q62956; C
                                                                                                                                                                                            EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Carroll S.L., Miller M.L., Frohnert P.W., Kim S. "Expression of neuregulins and their putative re ErbB3, is induced during Wallerian degeneration.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-Sprague-Dawley; TISSUE-Spinal cord MEDLINE-97184212; PubMed-9030624;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "An extended family of prote expressed in the vertebrate Neuron 6:691-704(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Sciatic ner
MEDLINE-91222560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-98221155; PubMed-9553078; Zhao Y.-Y., Sawyer D.R., Baliga R.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 1031-1198 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 848-901 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-Heart;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID-10116;
                                                                                                                                                                                                                                           send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RECEPTORS (POTENTIAL).

SUBCELLULAR LOCATION: Type I membrane protein.

TISSUE SPECIFICITY: PREFERENTIALLY EXPRESSED IN THE DEVELO
NERVOUS SYSTEM. EXHIBITS DISTINCT AND HIGHLY REGIONALIZED
OF EXPRESSION IN THE ADULT BRAIN, WHERE IT IS MAINLY FOUND
RETICULAR NUCLEUS OF THE THALLAMUS. VERY LOW LEVELS IN KID
                                                                                                                                                                                                                                                                                                                                                                                                                                     RESIDUES (BY SIMILARITY: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tyrosine phosphate.
SUBUNIT: HOMODIMER OR HETERODIMER WITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON
                                                                                                                                            AF041838;
U52531; AA
P11362; 1F
  PF00757; Furin
                                                                                                                                                                                                                                           an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lemke G.
                                             IPR000494; I
IPR000719; I
IPR002174; I
                                                                                                                                                                                                                                      equires a license agreement (S email to license@isb-sib.ch).
                                                                                                                                         AAC53051.1;
1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Y SIMILARITY).
BELONGS TO THE
                                                                                                                                                                                              AAD08899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PubMed-2025425
                                                                                            EGFR_L_domain.
Euk_pkinase.
                                          Tyr_pkinase
                                                                        Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein-tyrosine kinase
                                                                                                                                                                                       1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                     EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      system.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Opel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of cardiac myocytes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D.J.,
                                                                                                                                                                                                                                                               http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EACH OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      neonatal.and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 receptors,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Corbett J./
tors, ErbB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYROSINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             differentially
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                     he EMBL outst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.7.1.112).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER
                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEVELOPING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IN KIDNEY,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      adult
                                                                                                                                                                                                                                                                                                                                                                 a collaboration
                                                                                                                                                                                                                                                                                           for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ERBB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PATTERNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IN THE
                                                                                                                                                                                                                                                                                           commercia!
                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                     9
```

```
밁
                   Q
                                              밁
                                                                  δÃ
                                                                                                                                         Query Match
Best Local
                                                                                           Matches
                                                                                                                                         CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                             MOD_RES
                                                                                                                                                                                                                                                                                                                                          DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                            DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACT_SITE
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE: PROOIDI PROTEIN_KINASE_ATP; 1.

PROSITE: PS00107; PROTEIN_KINASE_DOM; 1.

PROSITE: PS00109; PROTEIN_KINASE_TYR; 1.

PROSITE: PS00109; PROTEIN_KINASE_TYR; 1.

Transmembrane; Glycoprotein; Multigene family; Rece
Transferase; Tyrosine-protein kinase; ATP-binding;
                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                   MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam;
Pfam;
                                              1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMART; SM00261; FU; 4. SMART; SM00219; TyrKc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRINTS; PR00109; TYRKINASE. ProDom; PD000001; Euk_pkinase;
                                                                                                                                                                CONFLICT
                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                      87
                                                                   34
                                                          PRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPS-----E
                      TDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PF00069;
PF01030;
PF02757;
 EEGYMTPMHDKPKQEYLNPVE
                                              PEAPVA - - QGATAEMFDDSCCNGTLRKPVVPHVQEDSSTQRYSADPTVFAPERNPRAELD
                                                                                                      Similarity
                                                                                                                                         548
548
576
620
1062
1308
                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Recep_L_domain;
YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pkinase;
                                                                                                                                          Ä
                                                                                                                                                     548
576
620
1062
1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1308
651
675
1308
334
633
985
732
751
                                                                                                                                                                                                                                                                                   633
1162
1188
1188
1258
1284
                                                                                                     12.9%;
                                                                                                                                         146957
                                                                                                                                                    N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
S -> N (IN REF. 3).
PYT -> SYR (IN REF.
                                                                                                                                                                                                                                                                                           ATP (BY SIMILARITY.
BY SIMILARITY.
                                                                                          Score 152; DI
Pred. No. 0.02
%3; Mismatches
                                                                                                                                          ¥
                                                                                                                                                                                                  N-LINKED
N-LINKED
                                                                                                                                                                                                                                   N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL.
RECEPTOR P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                    N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYS-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYS-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                          D944BB0996A08B41
                                                                                                                                                                                                (GLCNAC. .
                                                                                                                                                                                                                                   (GLCNAC. .
                                                                                                                                                                                                                                                          PROTEIN-TYROSINE
                                                                                                      DB 1;
.024;
                                                                                                                                                                                                                                                                                           (AUTO-)
(AUTO-)
(AUTO-)
                                                                                           60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Receptor; Signal; ing; Phosphorylation
                                                                                                                 Length 1308;
                                                                                                                                                     ω
.
                                                                                                                                          CRC64:
                                                                                                                                                                                                  (POTENTIAL)
(POTENTIAL)
                                                                                                                                                                                                                                   (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                             (BY SIMILARITY).
(BY SIMILARITY).
(BY SIMILARITY).
(BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KINASE ERBB-4.
-KNGDLQ- 1181
                                                                                           Gaps
                        146
                                                                     86
                                                                                           9
```

```
RESULT 8
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1991 (Rel. 20, Created)
01-NOY-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Splicing factor, proline-and glutamine-rich (Polypyrimidine tract-binding protein-associated splicing factor) (PTB-associated splicing factor) (PSF) (DNA-binding P52/P100 complex, 100 kDa subunit).
SFPQ OR PSF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1230
                                                                                                                                                                 SEQUENCE OF 312-707 FROM N.A. TISSUE-Fetal skeletal muscle; MEDLINE-90091812; PubMed-2480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SPPO OR PSF.
HOMO Saplens (Human).
Homo hetazoa; Chordata;
EMBL; X70944; CAA50283.
EMBL; X16850; CAA34747.
PIR; A43557; A43557.
PIR; S29770; S29770.
                                                          use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                     Gower H.J., Moore S.E., Dickson G., Elsom V.L., 1 "Cloning and characterization of a myoblast cell defined by 24.1D5 monoclonal antibody."; Development 105:723-731(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=90091812; PubMed=2480877;
Gower H.J., Moore S.E., Dickson G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mammalia; Eutheria; Primates; NCBI_TaxID=9606;
                                                                                                           the
                                                                                                                      between
                                                                                                                                                                                                                                                                                             <del>:</del>
                                                                                                                                                                                                                                                                                                       Biochem.
                                                                                                                                                                                                                                                                                                                              Zhang W.-W., Zhang L.-X., Busch R.K., "Purification and characterization of
                                                                                                                                                                                                                                                                                                                                                       MEDLINE=93176127; PubMed=8439294;
                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 48-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genes Dev. 7:393-406(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patton J.G., Porro E.B., Galceran "Cloning and characterization of I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Fetal brain;
MEDLINE=93194059; PubMed=8449401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P23246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SFPQ_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     147
                                                                                             European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                          ECTOKINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VFAFGGAVENPEYLTPQGGAAPQPHPPPA---
                                                                                                                    SWISS-PROT entry is copyright. It is produced through a collaboration sen the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEKAKKAFDNPDYWNHSLPPRSTLQHPDYLQEYSTKYFYKQNGRIRPIVAENPEYL 1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---FSPAFDNLYYWDQDPPERGA--PPSTFKGTPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P30808;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -ALDNPEYHSASSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                    AND 213-246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PARTIAL SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             - PPKAEDEYVNEPLYLNTFTNALGNAEYMKNSLLSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                n J.,
PSF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tempst I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AND
                                                                                                                                                                                                                                                                                                                             Farres J., Bus a DNA-binding
                                                                                          There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALTERNATIVE SPLICING
                                                                     http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P., Nadal-
l pre-mRNA
                                                                                Usage
                                                                                                                                                                                                                                                                                                                                                                                                               Nayak R., Walsh
L surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nadal-Ginard
                                                                                                                                                                                                                                                                                                                                          Busch
                                                                                bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Euteleostomi;
Homo.
                                                                                                                                                                                                                                                                                                                              heterodimer of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AENPEYL
                                                                                                                                                                                                                                                                                                                                          н.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                splicing
                                                                                   and
                                                                                                                                                                                                                                            SUBUNITS
                                                                                                                                                                                                                                                                                          EARLY IN
                                                                                   for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      212
                                                                                                                                                                                                                                                                                                                                                                                                                             F.S.;
                                                                                   commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1229
                                                                                                                                                                                                                                                                                                                               52
                                                                                                        9
                                                                                              ö
                                                                                                        its
```

```
RESULT 9
ERBB_ALV
 Вþ
                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                    δã
                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 58
                                                                                                          21-JUL-1986
15-JUL-1999
15-JUN-2002
       SEQUENCE FROM N.A.
MEDLINE-#522822; PubMed-2988784;
Nilsen T.W., Maroney P.A., Goodwin R.G.,
Crittenden L.B., Raines M.A., Kung H.-J.;
"c-erbB activation in ALV-induced erythro
                                                                                                                                        ERBB_ALV P00534;
                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
SEQUENCE
                                                              Avian leukosis virus.
Viruses; Retroid viruses;
NCBI_TaxID-11864;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alternative splicing DOMAIN 297 3 DOMAIN 371 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000504; RNA_rec_mot
Pfam; PF00076; rrm; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS50102; RRM; 2. PROSITE; PS00030; RRM_RNP_1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genew; HGNC:10774; SFPQ
                                                                                           V-ERBB.
                                                                                                   Tyrosine-protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nuclear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MIM; 605199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SWISS-2DPAGE;
                                                                                                                                                                                                                 170
                                                                                                                                                                                                                                   108
                                                                                                                                                                                                151
                                                                                                                                                                                                                                                     118
                                                                                                                                                                                                                                                                       55
                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                           11
                                                                                                                                                                                                                                                                                                                              بر
                                                                                                                                                                                                                                                                                                            GGGGGFHRR
                                                                                                                                                                                                                                                                                                                              GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                       ---GPKPPIPPPPHQQQQQPPPPQQPPPHQPP---PHPQPHQQQQP---
                                                                                                                                                                                                PTPPPAVTSA------PP--GAPPPTPPSSGVPT
                                                                                                                                                                                                                 PHPPPAFSPAFDNLYYWDQDPPERGAPPST - - FKGTPT
                                                                                                                                                                                                                                   KPVVAQGPGPAPGVGSAPPASSSAPPATPPTSGA----
                                                                                                                                                                                                                                                                                         LQSLPTHDPSPLQRYSE-DPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPRE--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P11940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SM00360:
                                                                                                                                                                                                                                                                                                                                                 . Similarity
58; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein;
                                                                                                                                                                                                                                                                                                                                                                                    243
707
                                                                                                            (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                    GPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPOGGAAPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P23246; HUMAN
promoter
                                                                                                                                                                                                                                                                                                                                                                                     A
A
                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RRM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RNA-binding;
                                                                                                           01,
38,
41,
                                                                                                                                                                                                                                                                                                                                                                                     243
76149
                                                                                                                                                                                                                                                                                                                                                                                                               369
452
27
21
21
266
27
265
27
265
27
27
28
31
38
46
574
616
641
                                                                                                                                                                                                                                                                                                                                                        12.3%;
26.6%;
                                                                                                           Last sequence up
                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                            GGGGGRGGLHDFR-----
 insertion
                                                                                                   transforming
                                                                                                                                                                                                                                                                                                                                                                                      WW.
                                                                       Retroviridae;
                                                                                                                                                                                                                                                                                                                                                 13;
                                                                                                                                                                                                                                                                                                                                               Score 145.5; DB Pred. No. 0.033; L3; Mismatches E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RNA-BINDING
RNA-BINDING
3 X 3 AA REPI
                                                                                                                                                                                                                                                                                                                                                                                                                                  POLY-ARG POLY-GLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                            POLY-PRO.
POLY-GLN.
POLY-PRO.
                                                                                                                                                                                                                                                                                                                                                                                    PNKKPRF -> VRMIDVG (IN SHORT G -> R (IN REF. 3). 6D8D5EA95E235847 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                               POLY-GLY.
RTERFGQGGAGPVGGQGPRGMGPGTPAGYGRGREEYEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                     POLY-PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POLY-GLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POLY-GLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GLN/GLU/PRO-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA-binding; mRNA splicing; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BINDING (RRM) 1.
BINDING (RRM) 2.
3 AA REPEATS OF F
erythroblastosis: novel result in expression of
                                                                                                  update)
on update)
g protein
                                                                                                                                                 634
                                                                       Alpharetrovirus
                           Rottman
                                                                                                                                                ₹
                                                                                                                                                                                                                                                                                                           -SPPPGMGLNQNRGPMGPGPGQS 54
                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                 205
                                                                                                                                                                                                                                                                                                                                                 82;
                                                                                                   erbB (EC 2.7.1.112).
                           F.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R-G-G.
                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                  ----PPGSGPGPT 150
                                                                                                                                                                                                                                                                        SSGQqqqq-..
                                                                                                                                                                                                                                                                                                                                                                   707;
                                                                                                                                                                                                                                                                                                                                                                                                       ISOFORM).
                                                                                                                                                                                                                                                                                                                                                 65;
                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                        107
                                                                                                                                                                                                                                                                                         117
                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                        •
                                                                                                                                                                                                                                                                                                                                                 10;
```

```
RESULT 10
PRP1_HUMAN
ID PRP1_
AC P0428
DT 20-MA
DT 13-AU
DT 16-OC
DE Saliv
DE [Cont
                                                                                                                                                                                         Ş
                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 54
          20-MAR-1987 (Rel. 04, Created)
13-AUG-1987 (Rel. 05, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Salivary proline-rich protein precursor (Clones
[Contains: Basic peptide IB-6; Peptide P-H].
                                                                                                                                                                                                                                                                                                                                                                                                                                                         BINDING
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a clother the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and formodified and this statement is not removed.
                                                                                                              HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRINTS; PRO0109; TYRKINASE.

ProDom; PD000001; Euk_pkinase; 1.

SMART; SM00219; TYRKC; 1.

PROSITE; PS00107; PROTEIN KINASE ATP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000719; Euk_pkinase
InterPro; IPR001245; Tyr_pkinase
Pfam; PF00069; pkinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M10066; AAA48763.1; ALT_INIT. PIR; A00643; TVCHLV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  amino-truncated EGF :
Cell 41:719-726(1985
                                                                                 P04280;
                                                                                               PRP1_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
Transferase; Tyrosine-protein kinase; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS00109; PROTEIN_KINASE_TYR; PROSITE; PS50011; PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                   586
                                                                                                                                                                                              189
                                                                                                                                                                                                                       534
                                                                                                                                                                                                                                                   148
                                                                                                                                                                                                                                                                            503
                                                                                                                                                                                                                                                                                                                                 451
                                                                                                                                                                                                                                                                                                      88
                                                                                                                                                                                                                                                                                                                                                            35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              titles requires a license agreement (See http://www.isb-sib.ch/announce/send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C-ERBB GENE, WHICH LEADS TO C-ERBB ACTIVATION MISCELLANEOUS: THIS PROTEIN IS SYNTHESIZED AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPOSIANE PHOSPHATE.

MISCELLANEOUS: THIS PROTEIN IS PRODUCED BY ERYTHROLEUKEMIA IN CHICKS WHICH HAVE BEEN INJECTED WITH THE AVIAN LEUKOSIS AND SUBSEQUENTLY DEVELOP LEUKEMIA. THE LEUKEMIAS ARE INDUCE THE INSERTION OF RETROVIRAL PROMOTER ELEMENTS IN OR NEAR THE INSERTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATALYTIC ACTIVITY: ATP +
                                                                                                                                                                QINLDNPDYQQDFLPNETKPNGLLKVPAAENPEYLRVAAP
                                                                                                                                                                                                                                                                                                                                                 RSPL----APSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSET---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B00643; TVFVLV.
                                                                                                                                                                                              ----BPPE----
                                                                                                                                                                                                                                                                                                     DGYVAPLTCSPOPEYVNOPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDV
                                                                                                                                                                                                                                                                                                                                RTPLLSSLSATSNNSATNCID-----RNGQGHPVREDSFVQRYSSDPTGNFLEESID
                                                                                                                                                                                                                       SLTAISKLPMDSRYQNSHSTAVDNPEYL-
                                                                                                                                                                                                                                                    E - - -
                                                                                                                                                                                                                                                                            DGFL-----PAPEYVNQ--LMPKKPS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P11362; 1FGK
                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                           132
138
165
257
                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Ą,
                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BELONGS TO THE
                                                                                                                                                                                                                                                                                                                                                                                                                                           165
257
70891 MW;
                                                                                                                                                                                           RGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            receptor.";
                                                                                                                                                                                                                                                                                                                                                                                                   11.7%;
24.5%;
                                                                                                                                                                                                                                      -AFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euk_pkinase
                                                                                                                                                                                                                                                                                                                                                                                      25;
                                                                                                                                                                                                                                                                                                                                                                                                                                        ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
; E705E33A0BE01FCC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                    Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein tyrosine -
                                                                                                                                                                                                                                                                                                                                                                                                  ± 138;
... 0.
                                                                                              331
                                                                                                                                                                                                                                                                                                                                                                                                  DB 1
                                                                                            ₿
                                                                                                                                                                                                                      -NTNQSPLAKTVFESSPYWIQSGNH
                                                                                                                                                                                                                                                                                                                                                                                                                ۲.
                                                                                                                                                                                                                                                                                                                                                                                      59;
                                                                                                                                                                                           217
                           CP3,
                                                                                                                                                                                                                                                                                                                                                                                                              Length 634;
                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A GAG-ENV-ERBB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADP
                           CP4
                                                                                                                                                                                                                                                                           TAMVQNQIYNNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    +
                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INDUCED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a collaboration
                                                                                                                                                                                                                                                                                                                                                                                     82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             roi
                           CP5)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VIRUS
                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ВΥ
                                                                                                                                                                                                                                                                           533
                                                                                                                                                                                                                                                                                                                                502
                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          no
                                                                                                                                                                                                                                                                                                                                                                                     10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     its
```

```
õ
                                                                                                                                                                       8
    ₽.
                                        δã
                                                                                    멍
                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                            Вþ
                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                   SOLUTION OF THE STREET 
                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Repeat;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. The use by non-profit institutions as not removed modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-85289325; PubMed-2993301;
MEDLINE-85289325; Azen E.A., Smithles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Maeda N., Kim H.-S., Azen E.A., Smithles O.;
"Differential RNA splicing and post-translational human salivary proline-rich protein gene system.", J. Biol. Chem. 260:11123-11130(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PIR; A03291; PIHUB6.
PIR; C25372; C25372.
Genew; HGNC:9337; PRB1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; K03204; AAA60185.1; -. EMBL; K03205; AAA60186.1; -. EMBL; K03206; AAA60187.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (Human)
Eukaryota; Metazoa; (
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MIM; 180989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide P-H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        parotid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Saitoh E., Isemura S., Sanada K.; "Further fractionation of basic p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-84161824; PubMed-6671974;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rauffman D., Hofmann T., Bennick A., Kell
"Basic proline-rich proteins from human proteins IB-1 and
covalent structures of proteins IB-1 and
Biochemistry 25:2387-2392(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biochemistry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           covalent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-86243355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF
                                                                                    188
                                                                                                                                                                           141
                                                                                                                                                                                                                    65
                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                                                                      11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biochem.
                                                                                                                                                                                                                                                                                                      RSSSTRSGGGDLTLGLEPSEEEAPRSPLAP---SEG---AGSDVFDGDLGMGAAKGLQSL
                                            PHPPPAFSPAFDNLYYWDQDPPERG-----
                                                                                                                                                                                                                    PTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPS-----PR--- 116
                                                                                                                                                                                                                                                            KSRSPRSPPGK-PQGPPPQGGNQPQGPPPPPGKPQGPPPQGGNKPQGPPPPGKPQG----
                                                                                    NRPQGPPPPGKPQGPPPQGDKSRSPQSPPGK
                                                                                                                                                                                                                                                                                                                                                   64 ;
                                                                                                                             -EGPLPAARPAGATLERAKTLS----PGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        saliva and complete
                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Parotid
                                                                                                                                                                           -PPPQGDKSQSPRSP-PGKPQG-----
                                                                                                                                                                                                                                                                                                                                                                                                                          276
331
                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94:1991-1997(1983).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             276-331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              214-331.
                                                                                                                                                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gland;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed-3521730;
                                                                                                                                                                                                                                                                                                                                                                                                                                 276
32596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        331
331
238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                     .11.5%;
25.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Multigene family;
QGPPPQGGNKPQGPPPGKPQGPPAQGGSKSQSARAPPGKPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                     MΨ;
                                                                                                                                                                                                                                                                                                                                                 17;
                                                                                                                                                                                                                                                                                                                                              Score 135.5;
Pred. No. 0.06
17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEPTIDE 1B-6.
PEPTIDE P-H.
MISSING (IN CLONE (
FTIG-VAR_005561.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋗
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MISSING (IN CLONE CP-5).
                                                                                                                                                                                                                                                                                                                                                                                                                                                       /FTId=VAR_005562
A -> S (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                   3F481FF8EBA39751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      proline-rich
no acid sequen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Keller P.;
man parotid;
and IB-6.";

    PPPQGGNQPQGPPPPPGKPQGPPQQGG

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      >-rich peptides from human
sequence of basic proline-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    There are no rest
                                                                                                                                                                                                                                                                                                                                                                         . 064 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Saliva;
                                                                                                                                                                                                                                                                                                                                                                                       BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Usage
                                                                                                                                                                                                                                                                                                                                                 76;
                                                                                                                                                                                                                                                                                                                                                                                       <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CP-4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               saliva:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cleavages
                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
.
                                                                                    PQGPPPQGGNQPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL
                                          -APPSTFK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
                                                                                                                                                                                                                                                                                                                                                 94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .ch/announce,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       commercia.
                                                                                                                               169
                                            201
                                                                                                                                                                           187
                                                                                                                                                                                                                                                              140
                                                                                                                                                                                                                                                                                                      54
                                                                                    231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                   13;
```

Š

202

GTPTAE - - NPE

210

```
RESULT 11

ODOZ_MY 11

ODOZ_MY 11

ODOZ_MY 11

AC Q10381

DT 01-OCT

DT 01-OCT

OC Bacter

OC Actino

OC STRAIN

RX MEDLIN

RX MEDLIN

RX MEDLIN

RX Gole S

RA Gole S

RA Hornsh

RA Cole S

RA Cole S

RA Hornsh

RA Cole S

RA Cole 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=98295987; PubMed=9634230;
Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C., Harr.
Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F.,
Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F.,
Badcock K., Basham D., Brown D., Chillingworth T., Connor R.,
Badcock K., Basham D., Brown D., Chillingworth T., Connor R.,
Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L.,
Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J.,
Rutter S., Seeger K., Skelton S., Squares S., Squares R.,
Sulston J.E., Taylor K., Whitehead S., Barrell B.G.;
"Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence.",
Nature 393:537-544(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-CDC 1551 / Oshkosh; Fleischmann R.D., Alland D., Elsen J.A., Carpenter L., White O., Fleischmann R.D., Alland D., Elsen J.A., Carpenter L., White O., Peterson J., DeBoy R., Dodson R., Gwinn M.L., Haft D., Hickey E., Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D., Salzberg Delcher A., Utterback T., Weldman J., Khouri H., Gill J., Mikula
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-OCT-1996 (Rel. 34, Last sequence update)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last sequence update)
Dihydrolipoamide succinyltransferase component of 2-oxoglutarate
dehydrogenase complex (EC 2.3.1.61) (E2).
SUCB OR RY2215 OR MT2272 OR MTCY190.26.
                                                                                                                                                                          the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bishai W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Actinobacteria; Actinobacteria (class); Actinobacteridae; Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium NCBI_TaxID=1773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-1996 (Rel. 34, 01-OCT-1996 (Rel. 34, 15-JUN-2002 (Rel. 41,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q10381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Whole genome comparison of Mycobacterium tuberculosis clinical and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       283
                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: BELONGS TO THE 2-OXOACID DEHYDROGENASE FAMILY SIMILARITY: CONTAINS 2 LIPOYL-BINDING DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PATHWAY: Tricarboxylic acid cycle.
SUBUNIT: FORMS A 24-POLYPEPTIDE STRUCTURAL CORE WITH OCTAHEDRAL
SYMMETRY (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
PATHWAY: Tri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MYCTU
                               AE007072;
P07016; 1C
MT2272; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GPPQQEGNNPQ
                                                                                                                       Z70283; CAA94256
                                                                                                                                                                                                                                                                                                                              the Swiss Institute of Bioinformatics
                                                               1C4T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                  AA94256.1; -.
AAK46557.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₿
                                                                                                                                                                                                                                                                                                                              and the
                                                                                                                                                                                                                                                                                                                                     EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Holroyd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Harris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               D.,
```

```
RESULT 12
- EXTN_TOBAC
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Complete
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                  EXTN_TOBAC P13983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR004167; E3_binding.
InterPro; IPR003016; Lipoyl.
Pfam; PF00198; 2-oxoacid_dh; 1.
Pfam; PF00364; biotin_lipoyl; 2.
Pfam; PF02817; e3_binding; 1.
ProDom; PD001115; 20xoacid_dh; 1
                                                                                                                                                                      MEDLINE-90128263; PubMed-2612909;
Keller B., Lamb C.J.;
"Specific expression of a novel cell wall hydroxyproline-rich
"Specific expression of a novel cell wall hydroxyproline-rich
glycoprotein gene in lateral root initiation.";
Genes Dev. 3:1639-1646(1989).
-I- FUNCTION: HAS A SPECIALIZED STRUCTURAL FUNCTION, POSSIBLY
                                                                                                                                                                                                                                                                                                   Nicotiana tabacum (Common tobacco).

Eukaryota; Viridiplantae; Etreptophyta; Embryophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eu

Asteridae; euasterids I; Solanales; Solanaceae; Nicot

NCBI_TaxID=4097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACT_SITE
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                        01-JAN-1990 (Rel. 13,
01-JAN-1990 (Rel. 13,
16-OCT-2001 (Rel. 40,
             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMUL outstation the European Bioinformatics Institute. There are no restrictions on its the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                               STRAIN-CV.
                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                         Extensin precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tricarboxylic acid cycle; Transferase; Acyltransferase; Lipoyl;
                                                                                                                                                                                                                                                                                                                                                                              HRGPNT3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE; PS00189;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27
                                                                                                 SUBCELLULAR LOCATION: Extracellular matrix.

PTM: EXTENSINS CONTAIN A CHARACTERISTIC REPEAT OF THE PENTAPEPTIDE SER-PRO(4). THE PROLINE RESIDUE IS HYDROXYLATED AND THEN
                                                                                     GLYCOSYLATED.
                                                                                                                                                            THE MECHANICAL
                                                                                                                                              MAIN ROOT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DKVDTEIPSPVAGVLVSISADEDATVPVGGELARIGVAADIGAAPAPKPAPKP--VPEPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KPAPEPPPVQPTSGAPAGGDAKPVLMPELGESVTEGTVIRWLKKIGDSVQVDEPLVEVST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAEQKKRAKAPAPAAQAAAAPAPKAPPAPALAHL 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FGGAVENPEYLTP--QGGAAPQPHPPPAFSPAFDNL 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QSLPTHDPSPLQ-----RYSEDPTVPLPSETD--GYVAPLTCSPQPEYVNQPDVRPQP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PTPKAEPAPSPPAAQPAGAAEGAPYVTPLVRKLASENNIDLAGVTGTGVGGRIRKQDVLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PSPREGPL---PAARPAGA-------TLERAKTLSPGKNGVVK--DVFA 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR001078;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR000089;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43
162
523
527
553
                                                                                                                                                                                                                                                               xanthi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                              ; TISSUE-Leaf;
PubMed-2612909;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LIPOYL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43 L
162 L
523 B
527 B
57087 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20xoacid_dh; 1.
                                                                                                                                                            PENETRATION
                                                                                                                                                                                                                                                                                                                                                                                         40, Last annotation update)
(Cell wall hydroxyproline-rich glycoprotein)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biotin_lipoyl.
E3_binding.
                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LIPOYL (POTENTI
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 135.5; D
Pred. No. 0.11;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIPOYL (POTENTIAL)
                                                                                                                                                          OF THE CORTEX AND EPIDERMIS OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 54B6E70D23B804A7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                    eudicots;
                                                                                                                                                                                                                                                                                                                                                Tracheophyta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
```

not removed.

Usage

for

Earp

Í'n Ξ

the

EGF

```
RESULT 13
EGFR_M
AC Q01279
AC Q01270
AC Q01270
AC EGFR.
OS MUS MUS MUS
AC EGFR.
OS MUS MUS
AC EGFR.
ON CBL_T
RN MEDLIN
RN MEDLIN
RN AVIVI
RT "Promo
RT (bek/K
RL Oncoge
RN [2]
RP SEQUEN
RC STRAIN
RX MEDLIN
RA AVIVI
RT "PROMO
RT (bek/K
RL Oncoge
RN [2]
RP SEQUEN
RC STRAIN
RX MEDLIN
RA PARIA
RT "Expre
RT in mou
RL Proc.
RN [3]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFT FITTERS OF STATE OF STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-FEB-1996
15-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entities
or send a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REPEAT
DOMAIN
                       STRAIN-BALB/c, and CD-1; TISSUE-Liver, and Decidua; MEDLINE-93126380; PubMed-7678348; Paria B.C., Das S.K., Andrews G.K., Dey S.K.; "Expression of the epidermal growth factor receptor in mouse blastocysts during delayed implantation."; Proc. Natl. Acad. Sci. U.S.A. 90:55-59(1993).
                                                                                                                                                                                                        Avivi A., Skorecki K., Yayon A., Givol D., "Promoter region of the murine fibroblast (bek/KGFR) gene.";
Oncogene 7:1957-1962(1992).
                                                                                                                                                                                                                                                                                               STRAIN-BALB/c; TISSUE-Liver; MEDLINE-93026370; PubMed-1408137;
                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (Mouse
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIR;
                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EGFR_MOUSE
Q01279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hydroxylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GPGHL----PSHGQRPPSPSHGHAPPSG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGDLTLGLEPSEEEAPRSPL---APSEGAGSDVFDGDLGMGAAKGLQSLPTH-DPSPLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S06733;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYLPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R------YSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDV------RPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EYLGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PTYSPPPPSPIYSPPPPAYSPSPPPTPTF-----SPPPPAYSPPPTYSPPP----P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAPQP-----HPPPAFSPA-----FDNLYYWDQDPPERGAPPSTFKGTPTAENP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PTHRHAPPTHQPSPLRHLPPSPRRQPQPPTYSPPPPAYAQ-----SPQPSPTYSPPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLPAARPAGATLE -------RAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RHGHPPPPTYAQPPPTPIYSPSPQVQPPPTYSPPPPTHVQPTPSPPSRGHQPQPPTHRHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X13885; CAA32090.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6733; S06733
Cell wall; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           requires a license agreement (S
an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              growth
                                                                                                                                                                                                                                                                                                                                                                                               214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           620
73
151
242
242
620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.4%;
26.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL.
EXTENSIN.
H-A-P-P.
H-A-P-P.
2 X 7 AA T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONTAINS THE SER-PH
3 X APPROXIMATE TAN
641DD2278AB28524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 135; DB 1; Pred. No. 0.13;
                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Ver
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TANDEM REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                              D.;
                                                                                                                                                                                                                                                                                                                                                                                                                  Vertebrata;
thi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Structural
                                                                                                                                                                                                                                                       growth factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SER-PRO(4) REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GHTPPRG-QHPPSHRRPSPPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2.7.1.112).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                  Euteleostomi;
; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T-H-R-H-A-P-P.
                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1,63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14;
    EMBL; X78987; CAA55587.1; -.
EMBL; U03425; AAA17899.1; -.
EMBL; X59698; CAA42219.1; -.
EMBL; L06864; AAA53029.1; -.
EMBL; Z12608; CAA78249.1; -.
HSSP; P11362; 1FGK.
MGD; MGI:95294; Egfr.
                                                                                                                                                                                                                                                                                                   Pfam; PF00069; Pfam; PF00757; Pfam; PF01030;
                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000494; E
InterPro; IPR000719; E
InterPro; IPR002174; E
InterPro; IPR001245; T
  TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (JUN-1992) to the
                                                                                                                                                                                                                             Pfam; PF01030; Recep_L_domain;
ProDom; PD000001; Euk_pkinase;
SMART; SM00261; FU; 3.
SMART; SM00219; TyrKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genes
[5]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The mouse waved-2 phenotype receptor tyrosine kinase."; Genes Dev. 8:399-413(1994).
                                                                                           Tyrosine-protein SIGNAL 1
                                                                                                                                                             PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE-Brain;
TISSUE-Brain;
MEDLINE-91232866; PubMed-2030916;
MEDLINE-91232866; PubMed-2030916; PubMed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. STRAIN-BALB/C; TIS Hibbs M.L.;
                                                 DOMAIN
                                                                                                                                      Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-C3H;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oncogene 6:673-676(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 1-714 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Luetteke N.C., Philli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-94170986; PubMed-8125255;
Luetteke N.C., Phillips H.K., Qiu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mitted (JUN-1992) to the EMBL/GenBank/DDBJ databases. FUNCTION: THE EGF RECEPTOR MEDIATES THE BLOCGICAL SI AND ALSO OF TGF-ALPHA, AMPHIREGULIN, HEPARIN-BINDING VACCINIA VIRUS GROWTH FACTOR (BY SIMILARITY).

CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tyrosine phosphate.
SUBCELLULAR LOCATION: Type I membrane protein.
MISCELLANDOUS: Binding of EGF to the receptor leads to
dimerization, internalization of the EGF-receptor complex,
induction of the tyrosine kinase activity, stimulation of
synthesis, and cell proliferation.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SWISS-PROT entry is copyright. It is produced through a sen the Swiss Institute of Bioinformatics and the EMBI
  25
25
648
671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-Liver;
                                                                                                                                          Glycoprotein;
                                                                                                                                                                                                                                                                                                                         Furin-like; 1.
                                                                                                                                                                                                                                                                                                                                                pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Liver;
  24
1210
647
670
1210
                                                                                                                                                                                                                                                                                                                                                                     Tyr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                               Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                       EGFR_L_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to the EMBL/GenBank/DDBJ databases
                                                                                                                ein; Receptor; Signal; Transfe;
ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N.A.
                                                                    POTENTIAL.

EPIDERMAL GROWTH FACTOR RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          results
                                               EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qiu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Т.н.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         There are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Copeland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as its content.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          point mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Usage
                                                                                                                                          Transferase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       study
```

restrictions

g 2

way

TEMBL

collaboration -

outstation

cell

DNA

and

for

.ch/announce/

+ protein

SIGNAL

Morse

the

ligand B.;

3. 

EGF,

GP30 AN

AND

. . .

Repeat.

```
RESULT 14
SM6B_MOUSE
                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                             밁
                                                                                                                                       õ
                                                                                                                                                                    망
                                                                                                                                                                                                Ş
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                    ð
                                                        믕
                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REPEAT
DOMAIN
DOMAIN
DOMAIN
NE_BIND
BISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
DISULFID
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOD_RES
MOD_RES
MOD_RES
                                                                                                                                                                      1071
                                                        1165
                                                                                                                                                                                                                              1011
                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REPEAT
                                                                                                                                                                                                  77
                                                                                                                                                                                                                                                         47
                                                                                                                                                                                                                                             DVFDGDLGMGAAKGLQSLPTHDPSP--
                                                        MSLDNPDYQQDFFPKETKPNGIFKG-PTAENAEYLRVAPP 1203
                                                                                                                               TLSPGKNGVVKDVFAFGGAVENPEYL-TPQGGAAPQPHPPPAFSPAFDNLYYWDQ-----
                                                                                                                                                                                                                           DVVDADEYLIPQQGFFNSPSTSRTPLLSSLSATSNNSTVACINRNGSCRVKEDAFLQRYS
                                                                                                               --APGRDLHYQN--PHSNAVGNPEYLNTAQ-----PTCLSSGFNSPALWIQKGSHQ
                                                                                                                                                                      SDPTGAVTEDNIDDAFL-
                                                                                                                                                                                               EDPTVPLPSET - - DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAK
                                                                                                                                                                                                                                                                                                 Similarity
                                                                                   -DP--
                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                            A
                                                                                                                                                                                                                                                                                                                                                        128
175
196
352
413
444
528
568
568
5603
603
623
1991
1117
                                                                           PERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
600
1071
981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.3%;
                                                                                                                                                                                                                                                                                                                                          134853
                                                                                                                                                                   -----PVPEYVNO-SVPKRPAGSVQNPVYHNQPLHP-----
                                                                                                                                                                                                                                                                                                                                     ATP (BY SIMILARITY)
BY SIMILARITY
BY SIMILAR
                                                                                                                                                                                                                                                                                     23;
                                                                                                                                                                                                                                                                                  Score 134; DB Pred. No. 0.27; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPROXIMATE.
APPROXIMATE.
SER-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROTEIN KINASE
ATP (BY SIMILA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (BY SIMILARITY).
(BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                            690E20D46DF2D2F5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N (BY PKC) (BY SIMILARITY).
N (AUTO-) (BY SIMILARITY).
N (AUTO-) (BY SIMILARITY).
N (AUTO-) (BY SIMILARITY).
N (AUTO-) (BY SIMILARITY).
N (AUTO-, MAJOR SITE)
                                                                                                                                                                                                                                                                                                              1;
                                                                                   217
                                                                                                                                                                                                                                                                                                             Length 1210;
                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                     76;
                                                                                                                                                                                                                                                         -LQRYS
                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                134
                                                                                                                                                                    1117
                                                                                                                                                                                                                             1070
                                                                                                                                                                                                                                                         76
                                                                                                                                           188
                                        밁
                                                               δÃ
                                                                                              B
                                                                                                                        Qy
```

```
Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAY-2000
30-MAY-2000
16-OCT-2001
                                                                                                                                                           CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                            CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SM6B_MOUSE
054951;
                                                                                                                                                                                                                                                     DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- SUBCELLULAR LOCATION: Type I membrane protein.
-!- TISSUE SPECIFICITY: DURING DEVELOPMENT IT IS EXPRESSE SUBRECIONS OF THE MERVOUS SYSTEM AND IS PARTICULARLY MUSCLE. IN ADULTHOOD, IT IS EXPRESSED UBIQUITOUSLY.
-!- SIMILARITY: BELONGS TO THE SEMAPHORIN FAMILY.
-!- SIMILARITY: CONTAINS 1 SEMA DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. MEDLINE-98027184;
                                                                                                                                                                                                                                                                                                              SIGNAL
                                                                                                                                                                                                                                                                                                                         Developmental
                                                                                                                                                                                                                                                                                                                                             Pfam; PF01403; Sema;
SMART; SM00423; PSI;
                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF036585; AAC00493.1; -. MGD; MGI:1202889; Sema6b.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "A novel transmembrane semaphorin can bind Mol. Cell. Neurosci. 9:409-419(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eckhardt F., Behar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEMA6B OR SEMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Semaphorin 6B
                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                   Signal;
                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001627;
                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR003659;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fishman M.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Sema N)
                                                                   669
                      729
                                            42
                                                                                                                           Local
                                                                                                                                       Match
                                                                                        GAGG-----RSPLAPS 41
                                           EGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPL-PSETDGYVAPLTC----
                                                                 GAGGGPGGPPEALLAPLMQNGWTKAALLHGGPHDLDTGLLPTPEQTPLPQKRLPTPHPHA 728
                     HALGSRAWDHSHALLSASASTSLLLLAPA---RASEQPQVPAEPGPESRLCAPRSCRASH 785
                                                                                                                61;
                                                                                                                                                                                                                                                                                                                                   Transmembrane;
                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Rel.
(Rel.
                                                                                                                                                              988
                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rel. 39, Last sequence update)
Rel. 40, Last annotation update)
precursor (Semaphorin VIB) (Sem
                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                        8
SPOPEYVNOPDVRPOPPSPREG-PLPAARPAGATLERAKTLSPGKNG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           39,
40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=9361278; r O., Calautti E.,
                                                                                                                          11.0%;
25.8%;
                                                                                                                                                                                                                                                                                                                                                                     Plexin-like.
Sema.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                   Multigene family; Neurogenesis; Glycoprotein;
                                                                                                                                                              ¥
                                                                                                                23;
                                                                                                                                                                                                                                         SEMAPHORIN 6B.
EXTRACELLULAR (POTENTIAL).
POTENTIAL.
CYTOPLASMIC (POTENTIAL).
SEMA.
POLY-LEU.
                                                                                                                                                           N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
E5F56D125CDA574D C
                                                                                                               Score 130.5; DE Pred. No. 0.33; Mismatches
                                                                                                                                                                                                         N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPECIFICALLY THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yonezawa K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       886
                                                                                                                                                                                            (GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Sema
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          c-src.";
                                                                                                                                      DB 1;
                                                                                                                93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SH3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VIB) (Semaphorin
                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nishimoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EXPRESSED
                                                                                                                Indels
                                                                                                                                   Length
                                                                                                                                                                      (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN OF
                                                                                                                                       886;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROMINENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Z
                                                                                                                59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                z
                                                                                                               Gaps
                                            96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ï
```

```
á
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
  밁
                                                  S
                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
PRP2_HUMAN
                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                         REPEAT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; K03208; AAA60189.1; PIR; A03294; PIHUPF. PIR; E25372; E25372.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Saitch E., Isemura S., Sanada K.;
"Complete amino acid sequence of a from human parotid saitua.";
J. Biochem. 93:883-888(1983).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.

MEDLINE-85289325; PubMed-2993301;

Maeda N., Kim H.-S., Azen E.A., Smithles O.;

Maeda N., Smithles O.;

Maeda N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human).
Homo sapiens (Human).
Homo rota; Metazoa; Chordata; Metazoa; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P02812;
21-JUL-1986 (Rel. 01, Created)
13-AUG-1987 (Rel. 05, Last sequence update)
13-AUG-1987 (Rel. 40, Last annotation update)
Salivary proline-rich protein precursor (Clone CP7) [Contains: Basic peptide P-F] (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=83265674; PubMed=6874669;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 134-194.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRP2_HUMAN
111 GPPPPGKPQGPPPQGGSKSRSSRSPPGK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   epeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       841 AALRRTHTFNSGEARP-----GGHRPRRHPPA-----DSTHLLPCGTGERTAPP 884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               143 -VVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPP 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       786
                                                       122
                                                                                                               60
                                                                                                                                                                       69
                                                                                                                                                                                                                                                                                    10 HRSSSTRSGGGDLTLGLEPSEEEAPRS-PLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHD
                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                         NKSRSSRSPPGK-PQGPPPQGGNQPQGPPPPPGKPQGPPPQGGNKPQGPPP--PGKPQGP
                                                                                                            PPQGDNKSQSARSP-PGKPQG------PPPQGGNQPQGPPPPPGKPQGPPPQGDNKSQ 110
                                                  -----AARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHP 172
                                                                                                                                                                    PSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PGDFPLTPHASPDRRRVVSAPTGPLDPSVGDGLPGPWSPPATSSLRR-----PGPHGPPT
                                                                                                                                                                                                                                                                                                                                         1 Similarity 25.1 55; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HGNC:9338; PRB2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Parotid gland; Multigene family; Saliva
                                                                                                                                                                                                                                                                                                                                                                                                                                                         251 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            194
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                         24641 MW;
                                                                                                                                                                                                                                                                                                                                         11.0%; Score 129.5; DB 1; 25.1%; Pred. No. 0.11; tive 15; Mismatches 88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASIC PEPTIDE P-F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         D779F590C0EBF30B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    basic proline-rich peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (See http://www.isb-sib.ch/announce,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
PQGPPPQGGNQPQGPP 154
                                                                                                                                                                                                                                                                                                                                                                                              Length 251;
                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cleavages in
                                                                                                                                                                                                                                                                                                                                            61;
                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                               59
                                                                                                                                                                                                                                                                                    68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                            9;
```

Search completed: April 28, 2003, 13:40:16 Job time: 8.53595 secs

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
  706.5
686
6588
640.5
396.5
396.5
315.5
315.5
315.5
245.5
244.5
244.5
244.5
232.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233.5
233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 716.5
716.5
716.5
706.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-821-883-23
1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      April 28, 2003, 13:37:23; Search time 6.04097 Seconds (without alignments) 1984.228 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112892 seqs, 41476328 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 STQVCTGTDMKLRLPASPET.....FGASCVTACPYNYLSTDVGS 289
                                       SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length DB
  MIPR_LYMST
IRR_MOUSE
INSR_HUMAN
INSR_RAT
INSR_HUMAN
IG1R_HUMAN
IG1R_HUMAN
IG1R_MOUSE
IRR_RAT
IG1R_RAT
INSR_RAT
INSR_RADDAE
POK5_BRACL
                                                                                                                                                                                                                                                                                                                  EGFR_DROME
LT23_CAEEL
ILPR_BRALA
HTK7_HYDAT
INSR_DROME
IRR_CAVPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ERB3_HUMAN
ERB3_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ERB4_HUMAN
ERB4_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EGFR_HUMAN
EGFR_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ERB2_RAT
ERB2_MESAU
EGFR_CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                       XMRK_XIPMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       112892
                    0024348
0024346
0025197
0025197
P109208
P109208
P1061213
P15213
P15208
P14616
P14616
P040751
00647751
00647751
00647751
00647751
00647751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                     rattus norv
l mus musculu
rattus norv
rattus norv
aedes aegyp
branchiosto
mus musculu
                                                                                                                                                                                                                                                                                                                                  0 homo sapien
9 rattus norv
8 xiphophorus
2 drosophila
8 caenorhabdi
6 branchiosto
7 hydra atten
8 drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rattus norv
mesocricetu
gallus gall
                                                                                                                                                                                                                                                                           cavia porce
lymnaea sta
mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      homo sapien
mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        homo sapien
                      drosophila
xenopus lae
                                                                                                                                                                            homo sapien
homo sapien
                                                                                                                                                                                                                                      homo sapien rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   homo sapien
                                                                                                                                                                                                                     mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rattus norv
```

	ted)	(Rel. 05, Created)	(Rel.	P04626; 13-AUG-1987	DT AC
	PRT; 1255 AA.	STANDARD;	ST	ERB2_HUMAN	Ì
				MAN	ERB2 HUMAN
				•	2007
	ALIGNMENTS		•		•
Q03185 giardia lam	TS11_GIALA	667 1	6.0	. 96	45
P57999 oryctolagus	ZAN_RABIT	2282 1	6.1	96.5	44
Q60675 mus musculu	LMA2_MOUSE	3106 1	6.1	97	43
	ATS4_HUMAN	837 1	6.1	97	42
	LMA1_HUMAN	3075 1	6.2	98	41
P27113 oryctolagus	LEM2_RABIT	551 1	6.3	100	40
	PAC4_HUMAN	969 1	6.4	101.5	39
P98110 sus scrofa	LEM2_PIG	484 1	6.4	101.5	38
	ITB2_HUMAN	769 1	6.5	103.5	37
	PAC4_RAT	937 1	6.6	104	36
Q14163 homo sapien	SREC_HUMAN	830 1	6.6	105	35
P12606 xenopus lae	ITB1_XENLA	798 1	6.6	105.5	34

•	-:- CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein tyrosine in tyrosine = ADP + protein tyrosine in	88888
18	ION: ESSENTIAL COMPONENT OF A NEUREGULIN-RECEPTOUGHT NEUREGULINS DO NOT INTERACT WITH IT ALONE. TIAL LIGAND FOR THIS RECEPTOR. NOT ACTIVATED BY AND AMPHIREGULIN.	88888
.; .;	cterization of a new allele ic competition hybridization is 15:426-429(1993).	R R R
	VARIANTS VAL-654 AND VAL-655. MEDLINE-93194196; PubMed-8095488; Ehsani A., Low J., Wallace R.B., Wu A.M.;	R R R R
,- ª	rbe-1/epidermal growth factor-receptor gene and is amplified in an salivary gland adenocarcinoma."; c. Natl. Acad. Sci. U.S.A. 82:6497-6501(1985).	R R R
•	, is distinct from the	RRRR
	"Tyrosine kinase receptor with extensive homology to EGF receptor shares chromosomal location with neu oncogene."; Science 230:1132-1139(1985).	RR RT
	Gray A.	RP RA RA
`	MEDLINE FROM N.A. MEDLINES 6611863; PubMed=3003577; Yamamoto T., Ikawa S., Akiyama T., Semba K., Nomura N., Miyajima N., Saito T., Toyoshima K.; Saito T., Toyoshima K.; "Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growth factor receptor."; Nature 319:230-234(1986).	RR
	Homo sapiens (Human).  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  NCBI_TaxID=9606;  [1]	
cell	UG-1987 (Rel. 05, Created) UG-1987 (Rel. 05, Last sequence update) UN-2002 (Rel. 41, Last annotation update) Protribusing kinase erbs-2 precursor (EC.2.7.1.112) Serbs2) (NEU proto-oncogene) (C-erbs-2) (Tyrosine kinase-type ace receptor HER2) (MLN 19). 2 OR HER2 OR NGL OR NEU.	CN DE DE DT DT DT DT DE
	SIANDAN	a A E

```
EMBL; M11767; AAA35808.1; J

EMBL; M11761; AAA35808.1; J

EMBL; M11763; AAA35808.1; J

EMBL; M11763; AAA35808.1; J

EMBL; M11764; AAA35808.1; J

EMBL; M11765; AAA35808.1; J

EMBL; M11765; AAA35808.1; J

EMBL; M11766; AAA35808.1; J

EMBL; M11730; AAA35808.1; J

EMBL; M1330; AAA35808.1; J

EMBL; M1330; AAA35908.1; J

EMBL; M13363; CAAA35978.1; -

EMBL; X3363; CAAA37960.1; -

EMBL; X3363; CAAA37960.1; -

EMBL; X3363; CAAA37960.1; -

EMBL; X3363; CAEA7060.1; -
                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR000494; EGFR_I_domai InterPro; IPR000719; Euk_pkinase. InterPro; IPR002174; Furin-like. InterPro; IPR002174; Tyr_pkinase. InterPro; IPR001245; Tyr_pkinase. InterPro; IPR004019; YIP_motif. Pfam; PF00069; pkinase; 1. Pfam; PF00069; pkinase; 1. Pfam; PF00757; Furin-like; 1.
                                                                                                                                                                                                                                                           PROSITE; PROTEIN_KINASE_ATP; 1.

PROSITE; PRO1019; PROTEIN_KINASE_ATP; 1.

PROSITE; PRO1019; PROTEIN_KINASE_DOM; 1.

PROSITE; PS00109; PROTEIN_KINASE_DOM; 1.

PROSITE; PS0011; PROTEIN_KINASE_DOM; 1.

PROSITE; PS0011; PROTEIN_KINASE_DOM; 1.

PROSITE; PS0011; PROTEIN_KINASE_DOM; 1.

PROSITE; PS0011; PROTEIN_KINASE_ATP-binding; Phosphorylation;
    DOMAIN
DOMAIN
NP_BIND
NP_BIND
NR
BINDING
ACT_SITE
DISULFID
                                                                                                                                                                                                                                                 CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and for the switch of the statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genew; HGNC:
MIM; 164870;
                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tities requires a license agreement (S send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE RESIDUES (BY SIMILARITY).

POLYMORPHISM: THERE ARE FOURS ALLELES DUE TO THE VARIATIONS POSITIONS 654 AND 655. ALLELE B1 (654-ILE-ILE-655) HAS A FRE OF 0.782; ALLELE B2 (654-ILE-VAL-655) HAS A FREQUENCY OF 0.2 ALLELE B3 (654-VAL-VAL-655) HAS A FREQUENCY OF 0.012.

SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                     PF01030; Recep_L_domain; PF02757; YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HGNC:3430;
      ERBB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGFR_L_domain.
Euk_pkinase.
Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
POTENTIAL.

POTENTIAL.

RECEPTOR POTENTIAL)

POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.

PROTEIN KINASE.

ATP (BY SIMILARITY)

BY SIMILARITY

BY SIMILARITY
                                                                                                                                                                                                                                               PROTEIN-TYROSINE LULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (See http://www.isb-sib,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         restrictions
                                                                                                                                                                                                                                                          KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IONS IN
A FREQUENCY
F 0.206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     collaboration -
                                                                                                                                                                                                                                                           ERBB-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
   ERB2.
                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0111111111111111111111
                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 289
                                        [1]
SEQUENCE FROM N.A.
TISSUE-Neuroblastoma;
TISSUE-86118662; pubMed-3945311;
MEDLINE-86118662; hung M.-C., Weinberr
Rargmann C.I., Hung M.-C., Weinberr
                                                                                                                                                                                                                                                                                  LT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
MOD_RES
MOD_RES
                         protein.";
Nature 319:226-230(1986)
[2]
                                                                                                                                         Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
   SEQUENCE OF 85:
TISSUE-Sciatic
                                                                                                                             Mammalia; Eutheria; NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VARIANT
                                                                                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                                                                                                           202
                                                                                                                                                                                                                                                                                                                                                                                                                        142
                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1170
1255
              852-905 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   124
124
187
259
530
571
654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1170
AA; 137909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   576
584
596
623
634
1139
1134
1139
124
124
125
530
530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
              N.A
                                                                        Weinberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                            epidermal
                                                                        R.A.;
```

```
ERB2_RAT STANDARD: PRT; 1257 AA.

P06494;

01-JAN-1988 (Rel. 06, Created)

15-DEC-1998 (Rel. 37, Last sequence update)

15-JUN-2002 (Rel. 41, Last annotation update)

Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)

(p185erbB2) (NEU proto-oncogene) (C-erbB-2) (Epidermal growth facerbor-related protein).

ERBB2 OR NEU.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GYVLIAHNOVROVPLORLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BY SIMILARITY.
BY SIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1587;
Pred. No. 9.2
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /FTId-VAR_004078.
P -> A (IN REF. 2).
W; 39E9DFDA04DCF962
                                                                                                                                                                                                                 Craniata; Ver
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /FTId-VAR_004077.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     growth
                                                                                                                                                                                                                                                     Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
9.2e-127;
0;
                                                                                                                                                                                                                       Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (AUTO-)
factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                 Euteleostomi; ; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
receptor-related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ż
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                 factor
                                                                                                                                                                                                                       Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ٠...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ٠.
```

```
InterPro; IPR000494; EGFR_L_domain.

R InterPro; IPR000719; EUK_pkinase.

JR InterPro; IPR002174; FUTIn-11ke.

DR InterPro; IPR002174; FUTIn-11ke.

DR InterPro; IPR001245; Tyr_pkinase.

DR InterPro; IPR004019; YLP_motif.

Pfam; PF000757; Futin-11ke; 1.

DR Pfam; PF00130; Recep_L_domain; 2.

Pfam; PF00130; Euk_pkinase; 1.

DR Pfam; PF001091; EUk_pkinase; 1.

DR PRODM; PD000001; EUk_pkinase; 1.

SMART; SM00261; FU; 3.

DR SMART; SM00219; TyrKC; 1.

DR SMART; PS00107; PROTEIN_KINASE_ATP; 1.

DR PROSITE; PS00109; PROTEIN_KINASE_DOM; 1.

PROSITE; PS0011; PROTEIN_KINASE_DOM; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
     A GUILIAN W.J., Bottomley A.C., Lofts F.J., Doak D.G., Mulvey D.,
A Newman R., Crumpton M.J., Sternberg M.J.E., Campbell I.D.;
Three dimensional structure of the transmembrane region of the processic and oncogenic forms of the neu protein.";
LEMBO J. 11:43-48(1992).
C.-1- FUNCTION: ESSENTIAL COMPONENT OF A NEUREGULIN-RECEPTOR COMPLE:
C. ALTHOUGHT MEUREGULINS DO NOT INTERACT WITH IT ALONE. GP30 IS.
C. ALTHOUGHT MEUREGULINS DO NOT INTERACT WITH IT ALONE. GP30 IS.
C. ALTHOUGHT MEUREGULIN.
C. ALTHOUGHT MEUREGULIN.
C. ALTHOUGHT MEUREGULIN.
C. ALTHOUGHT MEUREGULIN.
C. CATALYTIC ACTIVITY: ATP + a protein tyrosine — ADP + protein tyrosine phosphate.
C. THE CONSTITUTIVELY ACTIVATED ONCOGENIC VARIANT FORMS A HOMODI.
C. THE CONSTITUTIVELY ACTIVATED ONCOGENIC VARIANT FORMS A HOMODI.
C. SUBUNIT: HETERODIMER WITH EACH OF THE OTHER ERBB RECEPTORS.
C. THE CONSTITUTIVELY ACTIVATED ONCOGENIC VARIANT FORMS A HOMODI.
C. SUBULIAR LOCATION: Type I membrane protein.
C. SUBULLARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
C. SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              *An extended family of protei

expressed in the vertebrate n

Neuron 6:691-704(1991).

[3]

STRUCTURE BY NMR OF 650-668.

MEDLINE-92155181; PubMed-1346
 TRANSMEM
DOMAIN

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWI
between
the Euro
                                                                                                                                                                                                                                                                                  CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; X03362; CAA27059.1; ALT_INIT PIR; A24562; TVRTNU. HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-91222560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
     PubMed-1346763;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=2025425
     1257
654
654
1257
1257
1257
1256
989
989
736
755
847
2213
2213
2213
2245
245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein-tyrosine kinase
PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nervous system.";
                                                                                                                                                                                                       POTENTIAL.
CYTOPLASMIC
CYS-RICH.
CYS-RICH.
                                                                                                                                                                                                                                                                                POTENTIAL.
RECEPTOR PROTEIN-TYROSINE
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         differentially
                                                                                                                                                                                                                                                                                                    KINASE ERBB-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A HOMODIMER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPLEX,
3P30 IS A
3GF, TGF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        proto-
                                                                                                                                                                                                                                                                                                                                                                                          RESULT 3
ERB2_MESAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOD_RES
MOD_RES
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
 Nakamura '
Yamazaki '
"Cloning '
Gene 140:
                                                                                                                                                                                                                                          ERB2_MESAU STANDARD; PRT; 1254 AA. 605053; 15-DEC-1998 (Rel. 37, Created) 15-DEC-1998 (Rel. 37, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Receptor protein-tyrosine kinase erbB-2 precursor (p185erbB2) (NEU proto-oncogene) (C-erbB-2). ERBB2 OR NEU.
                                    MEDLINE-94193007; PubMed-7
Nakamura T., Ushijima T.,
Yamazaki Y., Ishikawa T.;
                                                                                                                                                                                      Mesocricetus auratus
Eukaryota; Metazoa; C
Mammalia; Eutheria; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                  TISSUE-Nerve;
                                                                                                                 SEQUENCE
                                                                                                                                                     NCBI_TaxID=10036;
                                                                                                                                                                     Mesocricetus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GICELHCPALVTYNTDTFESMHNPEGRYTFGASCVTTCPYNYLSTEVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SRCWGESSEDCOSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NHCWGESPEDCQILTGTICTSGCARCKGRLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Similarity
247; Conserv
   a T., Ushijima T.
i Y., Ishikawa T.
g and activation (
0:251-255(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269 296
310 312
310 332
35 339
13 542
5 578
5 578
5 586
6 644
1141
1250
6 625
6 644
1141
1250
6 68
188
260
260
532
573
631
631
                                                                                                               N.A.
                                                       PubMed-7908275;
jima T., Ishizaka
                                                                                                                                                                                        s (Golden hamster)
Chordata; Craniat
Rodentia; Sciurog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            85
85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 5 %
%
                     of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BY SIMILARITY.
BY SIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1353.5;
Pred. No. 5.7
                                                                                                                                                                                        Craniata; Vertebrata;
Sciurognathi; Muridae;
                       Syrian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  > E (IN ONCOGENIC
6129264583011402
                                                     Ý.,
                        hamster
                                                           Nagao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5.7e-107;
nes 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (AUTO-)
                                                         :
:
                       neu
                                                           Arai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NEU).
CRC64;
                     proto-oncogene.";
                                                                                                                                                                                                                                                                                    EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ) (BY SIMILARITY).
) (BY SIMILARITY).
) (POTENTIAL).
) (POTENTIAL).
) (POTENTIAL).
) (POTENTIAL).
) (POTENTIAL).
) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                          Euteleostomi;
Cricetinae;
```

1;

Gaps

۲

120 82 61

2.7.1.112)

262 24.0 202 180

```
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-like.
InterPro; IPR001245; Typ_pkinase.
InterPro; IPR004019; YLP_motif.
Pfam; PP00069; pkinase; 1.
Pfam; PF000757; Furin-like; 1.
Pfam; PF01030; Recep_r_domain; 2.
Pfam; PF02757; YLP; 2.
                                                   DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProDom;
SMART; S
SMART; S
DISULFID DISULFID MOD_RES MOD_RES
                                                                                                                                                         DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                          NP_BIND
BINDING
ACT_SITE
                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities
or send a
                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE: PS00107; PROTEIN_KINASE_MTP; 1.

PROSITE: PS00109; PROTEIN_KINASE_TYR; 1.

PROSITE: PS50011; PROTEIN_KINASE_DOM; 1.

Transmembrane: Glycoprotein; Multigene family; Receptor; Signal; Transferase; Tyrosine-protein kinase; ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This
                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modified
                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between
                                                                                                                                                                                                                                                                                                                                                                                                                     Proto-oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALTHOUGHT NEUREGULINS DO NOT INTER
POTENTIAL LIGAND FOR THIS RECEPTOR
ALPHA AND AMPHIREGULIN (BY SIMILAR
CATALYTIC ACTIVITY: ATP + a proted
tyrosine phosphate.
SUBUNIT: HETERODIMER WITH EACH OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL).
SUBCELLULAR LOCATION:
PTM: LIGAND-BINDING II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS TO THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESIDUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D16295; BAA03801.1; -. P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SM00261; FU; 3.
SM00219; TYTKC; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PD000001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g requires a license agreement (See http://www.isb-sib.ch/announce/
an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    non-profit institutions as long a and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ESSENTIAL COMPONENT OF A NEUREGULIN-RECEPTOR COMPLEX, NEUREGULINS DO NOT INTERACT WITH IT ALONE. GP30 IS A LIGAND FOR THIS RECEPTOR. NOT ACTIVATED BY EGF, TGF-AMPHIREGULIN (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTIVITY: ATP + a protein tyrosine -
                                                                                                                                                                                                                                                                                                                                                                                                                  Disease
                                                                                                                                                                                                                                                                                                                                          1254
652
675
1254
368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGFR_L_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N: Type I m
                                                                                                                                                                                                                                                                                                                                                                                                                     mutation
                        CYTOPLASMIC
CYS-RICH.
CYS-RICH.
CYS-RICH.
CYS-RICH.
CYS-RICH.
CYS-RICH.
SIMILARIT
BY SIMILARIT
                                                                                                                                                                                                                                                                                                                                                                             RECEPTOR PROTEIN-TYROSINE KINASE ERBB-2.
                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL
                         SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGF RECEPTOR FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      membrane protein.
S PHOSPHORYLATION ON
                                                                                                                                                                                                                                                                                      (BY SIMILARITY)
(BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                 KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THE OTHER ERBB
                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL).
 (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYROSINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RECEPTORS
 (BY
XB)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
 SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in no way
```

```
CCCCCCCCCCCTTTTARRARXXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 4
EGFR_CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 240; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P13387;
01-JAN-1990 (Rel.
01-JAN-1990 (Rel.
15-JUN-2002 (Rel.
Epidermal growth)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                               LAX I., Johnson A., Howk R., Sap J., Bellot F., Winkler M.,
Ullrich A., Vennstrom B., Schlessinger J., Givol D.,
"Chicken epidermal growth factor (EGF) receptor: cDNA cloning,
expression in mouse cells, and differential binding of EGF and
transforming growth factor alpha.",
Mol. Cell. Biol. 8:1970-1978(1988)
-i- FUNCTION: THE EGF RECEPTOR MEDIATES THE BIOLOGICAL SIGNAL
AND ALSO OF TGG-ALPHA, AMPHIREGULIN, HEPARIN-BINDING EGF,
VACCINIA VIRUS GROWTH FACTOR (BY SIMILARITY).

-i- CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + prote
                                      ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gallus gallus (Chicken).
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Calliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARIANT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. MEDLINE-88261272; PubMed-3260329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGFR_CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23 TQVCTGTDMKLRLPASPETHLDIVRHLYQGCQVVQGNLELTYLPANATLSFLQDIQEVQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
                                                        tyrosine phosphate.
SUBCELLULAR LOCATION: Type I membrane prote
MISCELLANEOUS: Binding of EGF to the recept
dimerization, internalization of the EGF-re
induction of the tyrosine kinase activity,
synthesis, and cell proliferation.
                                      synthesis, and cell proliferation.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RCWGESSEDCOSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RSLTEILKGGVLIRGNPQLCYQDTVLWKDVFRKNNQLAPVDIDTNRSRACPPCAPACKDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YMLIAHSQVRHVPLQRLRIVRGTQLFEDKYALAVLDNRDPLDNVTTATGRTPEGLRELQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HCWGASPEDCQTLTGTIAPRAVPAARARLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68
125
187
259
530
571
629
658
658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Rel. 13, Created)
(Rel. 13, Last sequence update)
(Rel. 41, Last annotation update)
rowth factor receptor precursor (EC 2.7.1.112) (CER)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125
125
187
259
530
571
571
658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        138252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC.
N-LINKED (GL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1322;
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LINKED (GLCNAC...LINKED (GLCNAC...

-> E (IN ONCOGENIC :

-> E (IN ONCOGENIC :

974C3791C21F2BE1 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               703
                                                                                                 receptor lead
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .7e-104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ž
                                                                                                                                            protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                stimulation
                                                                                                                                                                                                                                                                                                            cDNA cloning,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NEU).
CRC64:
                                                                                                                           leads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels ·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
                                                                                                 comp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   310
                                                                                                                         ç
                                                                                                                                                                                   protein
                                                                                  ဝှင်
မြေ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                              GP30 AN
                                                                                  cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                  DNA
                                                                                                                                                                                                                                AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

This

SWISS-PROT

entry

ŝ

copyright.

ij

is

produced

through

വ

collaboration

of Bioinformatics

outstation

313 289

000732;

Tam A.W.,

A.J.,

```
밁
                                                                              Q
                                                                                                                              밁
                                                                                                                                                               Ş
  S
                                                                                                                                                                                                               Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
DOMAIN
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                        CARBOHYD
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain; 2.
SMART; SM00261; FU; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              modified and this entities requires
                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tyrosine-prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPRO00494; EGFR_L_domain.
InterPro; IPRO00719; Euk_pkinase.
InterPro; IPRO02174; Furin-11ke.
InterPro; IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M20386; AAA48760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                     63
                                             95
                                                                                                                              35
                                                                                                                                                                                                                                       Local
                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           European
    SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLID-TNRSRACHPCSPMCKGS
                                                                     VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                      QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                                           VLIALNMVDVIPLENLQIIRGNVLYDNSFALAVLSNYH-MNKTQ------GLRELPMK
                                                                                                                            KVCQGTNNKLTQLGHVEDHFTSLQRMYNNCEVVLSNLEITYVEHNRDLTFLKTIQEVAGY
                                                                                                                                                                                                                 139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               an
                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    non-profit
and this st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PS50011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS00109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        on profit institutions as long and this statement is not removed. equires a license agreement (See email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                              703
703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          546
5569
5695
5696
592
592
1134
1190
1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Swiss Institute of Bioinf
Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77; PROTEIN_KINASE_ATP; 1
809; PROTEIN_KINASE_TYR; 1
11; PROTEIN_KINASE_DOM; 1
61ycoprotein; Receptor;
                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                  703
77427
                                                                                                                                                                                                                                   46.6%;
                                                                                                                                                                                                                                                                                                                                     EXTRACELLULAR (
POTENTIAL:
CYTOPLASMIC (PC
BY SIMILARITY:
BY SIMIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATP-binding;
                                                                                                                                                                                                                                                                                                     ¥.
                                                                                                                                                                                                                 48;
                                                                                                                                                                                                           Score 739; DB
Pred. No. 3.6e
48; Mismatches
                                                                                                                                                                                                                                                                                                  AFF2DE11B735A690
                                                                                                                                                                                                                                   739;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PARTIAL. PARTIAL.
                                                                                                                                                                                                                                                                                                                                       (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GROWTH FACTOR RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         There are no restrictions
                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                     .6e-55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Usage
                                                                                                                                                                                                               90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Transferase;
                                                                                                                                                                                                                                                                                                  CRC64;
                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                           703;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    commercial
                                           145
    181
                                                                                                                              94
                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                             Ģ
RESULT 5
EGFR_HUMAN
ID EGFR_H
AC P00533
AC 200533
AC 20053
AC 200533
AC 20053

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. (ISOFORM 1).

MEDLINE-84219729; PubMed-6328312;

Ullrich A., Coussens L., Hayfilck J.S., Dull T.J., Gray A., Tam A.W.
Lee J., Yarden Y., Libermann T.A., Schlessinger J., Downward J.,
Mayes E.L.V., Whittle N., Waterfield M.D., Seeburg P.H.;
"Human epidermal growth factor receptor cDNA sequence and aberrant
expression of the amplified gene in A431 epidermoid carcinoma cells
Nature 309:418-425(1984).
  Genomics [6]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein-tyrosine kinase EGFR OR ERBB1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EGFR_HUMAN STANDARD: PRT; 1210 AA. P00533; P06268; Q14225; Q9UMD7; Q9UMD8; Q9UMG Q00688; Q98252; Q94209; Q9GZX1; Q9H3C9; 21-JUL-1986 (Rel. 01, Created) (01-NOV-1997 (Rel. 35, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Epidermal growth factor receptor precursor (Epidermal growth factor receptor precursor 
                                                                                                                                                                                                                                                                                                                                                                                                                               Reiter J.L., Maihle N.J.;
"A 1.8 kb alternative transcript from the human epidermal growth factor receptor gene encodes a truncated form of the receptor.";
Nucleic Acids Res. 24:4050-4056(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Possible role of variant RNA transcripts in epidermal growth factor receptor expression Mol. Reprod. Dev. 41:149-156(1995).
                                                                                                                                                                                                                 TISSUE-Placenta;
                                                                                                                                                                                                                                                                            Gynecol.
                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE-Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=95382957; PubMed=7654368;
Ilekis J.V., Stark B.C., Scoccia B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human)
                                         isoforms
                                                                                                           Maihle N.J.;
                                                                                                                              Balasubramaniam
                                                                                                                                                    Schehl Sinclair
                                                                                                                                                                        Reiter
                                                                                                                                                                                         MEDLINE-21100872;
                                                                                                                                                                                                                                   SEQUENCE FROM
                                                                                                                                                                                                                                                                          llekis J.V., Gariti J., Niederberger 
"Expression of a truncated epidermal 
protein (TEGFR) in ovarian cancer."; 
Gynecol. Oncol. 65:36-41(1997).
                                                                                                                                                                                                                                                                                                                                                                MEDLINE-97256547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-97078686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9606;
                                                                                "Comparative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HCWGAGEQNCQTLTKVICAQQCSGRCRGKVPSDCCHNQCAAGCTGPRESDCLACRKFRDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alternative EGFR
rms.";
                                                                                                                          , Threadgill D.I
lair C., Pearsa
niam S., Crossl
                                                                                                                                                                                                                                   N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N.A. (ISOFORM 2).
                                                                                                                                                                                                                                                                                                                                                             PubMed=9103388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=8918811;
                                                                                                                                                                                     PubMed=11161793;
                                                                                                                          dgill D.W., Eley
, Pearsall R.S.,
, Crossley T.D.,
                                                                                                                                                                                                                                   (ISOFORMS
                                                                                                                                                                                                                                                                                                                                                                                                       (ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chordata;
Primates;
                                                                                   sequence
                                                                 transcripts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
)
                                                                                                                                                                                                                                                                                                                                                                                                         2).
                                                                                                                                                                                                                                   ω
                                                                                   analysis and isolation of human and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; | Catarrhini; Hominidae;
                                                                                                                                                                                                                                     AND
                                                                                                                        Green P.J. Magnuson
                                                                                                                                                                                                                                   4).
                                                               encoding
                                                                                                                                                                                                                                                                                                                    C., Sco
growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9UMG5;
                                                                                                                          Strunk K.E.,
h P.J., Yee D.,
son T.R., Jame
                                                                                                                                                                                                                                                                                                                                              Scoccia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (E)
                                                                                                                                                                                                                                                                                                                        factor r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n the regu
                                                                 truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q92795;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      regulation of 
man placenta.";
                                                                                                                              James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .1.112) (Receptor
                                                                                                                                                  D.,
                                                                                                                                                                                                                                                                                                                        receptor-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo
                                                                                                                          Danielsen
, Lampland
les C.D.,
```

C.M.,

ч

```
Mroczkowski B., "ATP-stimulated and supercoiled
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cells.";
Science
MEDLINE-89278137; PubMed-2543678; Margolis B.L., Lax I., Kris R., Dombalagian M., Hon Howk R., Givol D., Ullrich A., Schlessinger J.; *All autophosphorylation sites of epidermal growth receptor and HER2/neu are located in their carboxyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE Reiter J. Lampland Maihle N.
                                                                                                                                                                                                             epidermal growth Proc. Natl. Acad
                                                                                                                                                                                                                                                                                            SEQUENCE OF 1-29 FROM N.A.
MEDLINE-91107677; PubMed-1988448;
MEDLINE-91107677; PubMed-1988448;
Haley J.D., Waterfield M.D.;
"Contributory effects of de novo transcription and transcript termination in the regulation of human factor receptor proto-oncogene RNA synthesis.";
J. Biol. Chem. 266:1746-1753(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   O'Malley B.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 1028-1210 FROM N.A. MEDLINE-85046483; PubMed-6093780; Simmen F.A., Gope M.L., Schulz T.Z.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nature
[9]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Human and mouse alternative EGFR transcripts extracellular domain of the receptor."; Submitted (FEB-1999) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 1-29
MEDLINE-88217333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Jammen r...,

"Malley B.W.;

"Isolation of an evolutionarily conserve."

"Isolation of an evolutionarily conserve."

"Commun. 124:125-132(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xu Y.H., Ishii S., Clark A.J.L., Sullivan M., Roe B.A., Merlino G.T., Pastan I.; "Human epidermal growth factor receptor cDNA variety of RNAs overproduced in A431 carcinon nature 309:806-810(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lin C.R., Chen W.S., Kruiger W., Stolarsky
Evans R.M., Verma I.M., Gill G.N., Rosenfa
"Expression cloning of human EGF receptor"
                                                                                                                               MEDLINE=84191554;
                                                                                                                                                                                                                                                MEDLINE-85270438; Fishii S., Xu Y.H.,
                                                                                                                                                                                                                                                                                                                                                                                       Waterfield M.D.;
"The human EGF receptor gene: structure of identification of sequences regulating its Oncogene Res. 1:375-396(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 150-962 FROM N.A. MEDLINE-84245835; PubMed-6330563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amplification and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-84196372;
                                                                                                                                                                  Submitted
                                                                                                                                                                                                                                       "Characterization
                                                                                                                                                                                                                                                                         SEQUENCE OF 1-29
                                                                                                                                                                                                                                                                                                                                                                                                                                     Haley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                               o
                                                                                   309:270-273(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      224:843-848(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OF 575
                                                                                                                                                                                        OF.
                                                                                                                                           ACTIVITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ဝှ
                                                                                                                                                                  (SEP-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      575-687 FROM N.A.
, Threadgill D.W., Danielsen A.J.,
L., Balasubramaniam S., Crossley T
                                                                                                                                                                                                                                                                                                                                                                                                                                     Whittle
                                                                                                                                                                                                               Acad.
                                                                                             interaction DNA.";
                                                                                                                   Mosig
                                                                                                                                                                                                               factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                             FROM
                                                                                                                                                                                                            PubMed=2991899;
Stratton R.H., Roe B.A., Merling and sequence of the promoter refactor receptor gene.";
Sci. U.S.A. 82:4920-4924(1985).
                                                                                                                                PubMed=6325948;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24 FROM N.A.
PubMed=6326261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             three related messenger
                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=3329716;
                                                                                                                                                                 ç
                                                                                                                   G.,
                                                                                                                                                                                                                                                                       N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              N.A
                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                    Bennett
                                                                                                                   Cohen
                                                                                                        between
                                                                                                                                                                 SWISS-PROT
                                                                                                                  s.;
                                                                                                                                                                                                                                                                                                                                                                                                                                     P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Stolarsky L.S., Rosenfeld M.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                   Kinchington
                                                                                                        epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       carcinoma
                                                                                                                                                                                                                             B.A., Merlino G.T., promoter region of
                                                                                                                                                                 data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               epidermal
ells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Χ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complementary RNA products :
   carboxyl-terminal
                                                                                                                                                                                                                                                                                                                                                                                                  the 110 kb locus transcription.";
                                                                                                                                                                 bank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 is homologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Schehl
.O., Mag
                                                                                                       growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 encoding
                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cells
                                                                                                                                                                                                                                                                                                                                                                                                                                    .
,
                                  Honegger A.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Weber
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Carpenter
                                                                                                                                                                                                                                                                                                                   epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Magnuson
                                                                                                                                                                                                                                                                                                                             premature
                                                                                                                                                                                                                                                                                                                                                                                                              kb locus
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ullrich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       growth
                                                                                                        factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in A4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  only
                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ... gene
A431
             (EGF)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ដ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ma
                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O
```

```
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-96398132; PubMed-8962717; Smith K.D., Davies M.J., Bailey D., Renouf D.V. analysis of the glycosylation patterns of the "Analysis of the factor receptor expressed"
                                                                                                                                                                                                                                                               modified and this st
                                                                                                                                                                                                                                                                                                                                           This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Annu.
                                                                                                                                                                                                                             or send
                                                                                                                                                                                                                                                                                                                            between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mitogens.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-20198209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYDRATE-LINKAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the epidermal growth factor receptor ovary fibroblasts.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Identification of a novel site in EGF receptor.";
J. Biol. Chem. 264:10667-10671(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carpenter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-87297456; PubMed-3039909;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-98225196;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Asn-X-Cys sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sato C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ASN-603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Disulfide bond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sato C., Kim J.-H., Abe Y., Saito K., Yokoyama S., Kohda
"Characterization of the N-oligosaccharides attached to
Asn-X-Cys sequence of recombinant human epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REVIEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Receptors
                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e Y., Odaka M., Inagaki F., Lax I., Schlessisulfide bond structure of human epidermal Biol. Chem. 273:11150-11157(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     U. Rev. Blochem. 56:881-914(1987).

FUNCTION: Receptor for EGF, but also for other members of the family, as TGF-alpha, amphiregulin, betacellulin, heparinthe EGF-like growth factor, GP30 and vaccinia virus growth favorint involved in the control of cell growth and differentiation FUNCTION: Isoform 2/truncated isoform may act as an antagor CAPALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + ADP +
                                                                                                                                                                                                                                                             s SWISS-PROT entry is copyright. It is produced through a collat ween the Swiss Institute of Bioinformatics and the EMBL outst European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in ified and this statement is not removed. Usage by and for continuous content is not removed.
                                                                                                                                                                                                                                                                                                                                                                           expressed in ovarian cancers.

MISCELLANEOUS: Binding of EGF to the receptor lead dimerization, internalization of the EGF-receptor induction of the tyrosine kinase activity, stimula synthesis, and cell proliferation.

SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE SPECIFICITY: E:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              secreted.
ALTERNATIVE PRODUCTS: 4
truncated isoform/TEGFR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tyrosine phosphate.
SUBCELLULAR LOCATION:
                                                                        X00588;
U95089;
U48722;
U48723;
U48724;
U48725;
U48725;
 134; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Factors 13:121-132(1996).
                                                                                                                                                                                                                             an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE,
                                                                                                                                                                                                                                                 requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G
                                                                                                                                                                                                                               email
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127:65-72(2000).
                                                                        AAC50796.1;
AAC50797.1;
AAC50798.1;
                                                                                                                               CAA25240.1;
AAB53063.1;
AAC50802.1;
AAC50804.1;
                                                                                                                                                                                                                             to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed-10731668;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=9556602;
                                                                                                                                                                                                                                                 license
                 45.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SITES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SITES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Type I membrane protein. Isoform 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                isoforms;
2, 3/p110 an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASN-56;
                                                                                                                                                                                                                                                 agreement
Score 716.5;
Pred. No. 5.4e
14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in placenta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASN-352;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASN-175;
                                                                                                                                                                                                                                                 (See http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Schlessinger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /p170
1 4; ar
     υΒ 1;
5.4e-53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         receptor leads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASN-361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASN-413; ASN-444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          growth
 99;
                                                                                                                                                                                                                                                                                                                                                                                                                      stimulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ., Hounsell E.F.; extracellular domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  produced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                r members of the EGF
ulin, heparin-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chinese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           growth factor
                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J., KONGA ...,
h factor receptor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                here),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ASN-568
                                                                                                                                                                                                                                                                                                                                                                                                                                        comp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ដ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antagonist.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ż
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                       1210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hamster
                                                                                                                                                                                                                                                                                                                                                                                                                      of ex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               atypical
                                                                                                                                                                                                                                                                                                                            collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         is
                                                                                                                                                                                                                                                                                                                                                                                                                      cell
                                                                                                                                                                                                                                                 .ch/announce/
                                                                                                                                                                                                                                                                                                                          outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ANC
                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                      on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ·'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of.
```

Conservative

11;

Gaps

no

DNA

AND

```
EGFR_MOUSE
EGFR_MAC
Q01279
DT 01-FEB
CO MOST
GN EGFR.

OC MANDAIN
OC STRAIN
OC STRAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-BALB/c; TISSUE-Liver;
MEDLINE-93026370; PubMed-1408137;
AVIVI A., Skorecki K., Yayon A., Givol D.;
"Promoter region of the murine fibroblast growth (bek/KGFR) gene-";
Oncogene 7:1957-1962(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGFR_MOUSE
Q01279;
                                                         TISSUE-BIAIN:
MEDLINE-91232866; PubMed-2030916;
Avivi A., Lax I., Ullrich A., Schlessinger
Avivi A., Lax FRCE receptor sequences as a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-1996 (Rel. 33,
01-FEB-1996 (Rel. 33,
15-JUN-2002 (Rel. 41,
                                      "Comparison of
binding site.";
                                                                                                                                          SEQUENCE
                                                                                                                                                                                                               STRAIN=B6/C3; TISSUE-Liver;
MEDLINE=94170986; PubMed=8125255;
MEDLINE=94170986; PubMed=8125255;
Luetteke N.C., Phillips H.K., Qiu
Jenkins N.A., Lee D.C.;
"The mouse waved-2 phenotype resul
                                                                                                                                                                                                                                                                                                                                                          Submitted
                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-BALB/c;
                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-BALB/c, and CD-1; MEDLINE-93126380; PubMed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota;
Mammalia; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Epidermal growth
                                                                                                                                                                                                   receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                Hibbs M.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Paria B.C., Das S.K., Andrews G.K., Dey S.K.;
"Expression of the epidermal growth factor receptor gene in mouse blastocysts during delayed implantation.";
Proc. Natl. Acad. Sci. U.S.A. 90:55-59(1993).
                                                                                                                                                                                                                                                                                                                 EQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NLQEILHGAVRFSNNPALCNVESIQWRDIVSSDFLSNMSMDFQNHLGSCQKCDPSCPNGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VLTALNTVERIPLENLQIIRGNMYYENSYALAVLSNYD-----ANKTGLKELPMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KVCQGTSNKLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRNYDLSFLKTIQEVAGY
                                                                                                                                                                             se waved-2 phenotype tyrosine kinase."; v. 8:399-413(1994).
                      6:673-676(1991)
                                                                                                                                        OF 1-714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Metazoa;
Eutheria;
                                                                                                                                                                                                                                                                                                                                                        (APR-1994) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ıs (Mouse).
Metazoa; Chordata; C
™...+heria; Rodentia; !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                   z
                                                                                                                                                                                                                                                                                               N.A.
TISSUE-Liver;
                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-Liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     factor
                                                                                                                                        FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d CD-1; TISSUE=Liver, and PubMed=7678348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
or receptor precursor (E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                        N.A.
                                                                                                                                                                                                                     results
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; | Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                            н
                                                                                                                                                                                                                                                      Н.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1210
                                                                                                                                                                                                                   from a point mutation in the
                                                                                                                                                                                                                                                          Copeland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                         J., Givol guide to s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Decidua;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.7.1.112)
                                                                                                                                                                                                                                                        N.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Euteleostomi; ; Murinae; Mus
                                                             study
                                                                               D., Morse B.;
                                                                                                                                                                                                                                                          Earp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                           the ligand
                                                                                                                                                                                                                                                          H.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            regulated
                                                                                                                                                                                                                     EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
    TITLE TO CONTRACTOR OF THE TEST TO THE TES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SMART; SM00261; FU; 3.
SMART; SM00219; TYPKC; 1.
PROSITE; PS00107; PROTEIN_
PROSITE; PS00109; PROTEIN_
PROSITE; PS50011; PROTEIN_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; X78987; CAA55587.1; -. EMBL; U03425; AAA17899.1; -. EMBL; X59698; CAA42219.1; -. EMBL; L06864; AAA53029.1; -. EMBL; Z12608; CAA78249.1; -. HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00069; Pfam; PF00757; Pfam; PF01030; F
ACT_SITE
DISULFID
                                                                                                                                                                                                                                                                                                                 NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tyrosine-protein SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modified and this statement is not removed entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <del>:</del> :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eisinger D.P., Serre Submitted (JUN-1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MGD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF
STRAIN-C3H;
                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mitted (JUN-1992) to the EMBL/GenBank/DDBJ databases. FUNCTION: THE EGF RECEPTOR MEDIATES THE BLOCGICAL STAND ALSO OF TGF-ALPHA, AMPHIREGULIN, HEPARIN-BINDING AND ALSO OF TGF-ALPHA, AMPHIREGULIN, HEPARIN-BINDING VACCINIA VIRUS GROWTH FACTOR (BY SIMILARITY).

CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EM European Bioinformatics Institute. There are no restr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                synthesis, and cell proliferation.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SÜBCELLULAR LOCATION: Type I membrane prote MISCELLANEOUS: Bindling of EGF to the recept dimerization, interpalization of the EGF-re induction of the tyrosine kinase activity,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tyrosine phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MGI:95294;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PD000001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000494; EGFR_L_domain. IPR000719; Euk_pkinase. IPR002174; Furin-like. IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             969-1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pkinase; 1.
Furin-like; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Serrero
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Euk_pkinase;
    PROTEIN_KINASE_ATP;
PROTEIN_KINASE_TYR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ဂ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ein; Receptor; Signal; Transferase; ATP-binding; Phosphorylation; Repe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N.A.
  SER-RI
                                                                                                                                                                                                                                                                                                                                                                                                                 CYTOPLASMIC APPROXIMATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     e I membrane protein.

EGF to the receptor leads to
tion of the EGF-receptor compl
                                                                                                                                                                                                                                                                                                                                                                                                 APPROXIMATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                        PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
Y SIMILARITY
                                                                                                                                                                                                                                                                                                               (BY SIMILARITY). (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GROWTH FACTOR RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       stimulation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GP30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .ch/announce,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EGF,
```

. . <del>.</del> ‡

```
RESQUET 7

ERB4_H

ID ERB4_H

AC Q15303

DT 15-DEC

DT 15-DEC

DT 15-DEC

DT RECEPT

DE (P180e

GN ERB84

OC EUKARY

OC MAMMAN

OC MAMMAN

OC MAMMAN

OC TISSUE

RC TISSUE

RA Plowma

RA Plowma
                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
Best I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
CARBOHYD
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOD_RES
TISSUB-Breast carcinoma;
MEDLINE-93189574; PubMed-8383326;
Plowman G.D., Culouscou J.-M., Wh
Foy L., Neubauer M.G., Shoyab M.;
                                                                                                                                                                                15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Receptor protein tyrosine kinase erbB-4 precursor (EC 2. (p180erbB4) (Tyrosine kinase-type cell surface receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOD_RES
                                                                                                                      Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                               ERB4_HUMAN
Q15303;
                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                          ERBB4 OR HER4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                        Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            139
                                                                                                                                                                                                                                                                                                                                                                                                                         238
                                                                                                                                                                                                                                                                                                                                                                                                                                                           195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                                                                                                                                                                                                                                                                                                                                                                                    QDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NLOEILIGAVRESNNPILCNMDTIQWRDIVQNVEMSNMSMDL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLTEILKGGVLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSRACHPCSPMC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KVCQGTSNRLTQLGTFEDHFLSLQRMYNNCEVVLGNLEITYVQRNYDLSFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    al Similarity
138; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  558
562
582
595
620
624
680
1092
1110
1172
1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                571
579
591
617
628
636
636
680
1092
1110
1172
11172
                                                                    (ISOFORM
                                                                                                                        Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45.18;
47.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      134853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED (GLCNAC.
N-LINKED (GL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39;
                                                                  JМ-А).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PHOSPHORYLATION
PHOSPHORYLATION
PHOSPHORYLATION
PHOSPHORYLATION
PHOSPHORYLATION
(BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 716.5;
Pred. No. 5.
                                                                                                                      Craniata; V
Catarrhini;
                Whitney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y SIMILARITY).
LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -> DR (IN REF. 6)
690E20D46DF2D2F5
                                                                                                                                                                                                                                                                                                 1308
                 G
                                                                                                                                      Vertebrata;
                 Š
                                                                                                                                                                                                                                                                                                 ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4e-53
                                                                                                                        Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BY PKC)
(AUTO-)
(AUTO-)
(AUTO-)
                   Green
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1210;
                J.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL).
                                                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (BY SIMILARITY).
(BY SIMILARITY).
(BY SIMILARITY).
(BY SIMILARITY).
(BY SIMILARITY).
                                                                                                                                                                                         2.7.1.112)
c HER4).
                   Carlton
                                                                                                                                                                                                                                                                                                                                                                                     306
                                                                                                                                                                                                                                                                                                                                                                                                                      289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                G.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4;
```

```
entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Ligand-specific activation of HER4/p180erbB4, a epidermal growth factor receptor family."; Proc. Natl. Acad. Sci. U.S.A. 90:1746-1750(1993).
                                                                        between the Swiss Institute of Bioinformat
the European Bioinformatics Institute. The
use by non-profit institutions as long
modified and this statement is not removed.
                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       phorbol ester."
J. Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. (ISOFORMS JM-A AND JM-B) TISSUE-Fetal brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tissue distribution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Klagsbrun M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Elenius K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-Fetal brain; MEDLINE-97476287; PubMed-9334263;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           novel
                                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: Type I membrane protein.

ALTERNATIVE PRODUCTS: 2 ISOFORMS; JM-A (SHOWN HERE) AND JM-B;
ARE PRODUCED BY ALTERNATIVE SPLICING. THE TWO ISOFORMS DIFFER
FUNCTIONALLY IN THEIR RESPONSE TO PHORBOL ESTER: JM-A IS PROCESSED
BUT NOT JM-B. SO, THEY RESPECTIVELY REPRESENT CLEAVABLE AND
NONCLEAVABLE FORMS OF THE RECEPTOR. BOTH IS EXPRESSED IN THE HEART.
TISSUE SPECIFICITY: EXPRESSED AT HIGHEST LEVELS IN BRAIN, HEART,
KIDNEY, IN ADDITION TO SKELETAL MUSCLE, PARATHYROLD, CEREBELLUM,
PITUITARY, SPLEEN, TESTIS AND BREAST. LOWER LEVELS IN THYMUS,
PITUITARY, SPLEEN, TESTIS AND BREAST. LOWER LEVELS IN THYMUS,
LUNG, SALLVARY GLAND, AND PANCREAS.

LUNG, SALLVARY GLAND, AND PANCREAS.

LUGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B101. Chem. 272:26761-26768(1997).

FUNCTION: SPECIFICALLY BINDS AND IS ACTIVATED BY NEUREGULINS, NRG-
2, NRG-3, HEPARIN-BINDING EGF-LIKE GROWTH FACTOR, BETACELLULIN AND
NTAK. INTERACTION WITH THESE FACTORS INDUCES CELL DIFFERENCIATION.
NOT ACTIVATED BY EGF, TGF-A, AND AMPHIREGULIN.
CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein
                                                                                                                                                                                                                                            SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tyrosine phosphate.
SUBUNIT: HOMODIMER
                                                                                                                                                                                                                                                                           RESIDUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RECEPTORS (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           juxtamembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cortas G., Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OR HETERODIMER WITH EACH OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              domain isoforr
d differential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            s:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Choi C.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              processing
                                              (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of HER4/ErbB4. Isoform-specific processing in response to
                                                                                               There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rio
                                                   http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ċ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          fourth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plowman
                                                                                                                              restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER
                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          member of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ດ
                                                                                for
                                                                                                                                                           collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ERBB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                       9
9
```

EMBL; L07868; AAB59446.1; -.
HSSP; P11362; 1FCK.
Genew; HGNC:3432; ERBB4.
MIM; 600543; -.
InterPro; IPR000494; EGFR\_L\_domain.

Genew; HGNC:3432; ERBB4.

MIM; 600543; ...

InterPro; IPR000494; EGFR\_L\_domain.

InterPro; IPR002174; Furin-1ike.

InterPro; IPR002174; Furin-1ike.

InterPro; IPR002174; Tyr\_pkinase.

InterPro; IPR002174; Tyr\_pkinase.

InterPro; IPR004019; YLP\_motif.

Pfam; PF00069; pkinase; 1.

Pfam; PF00757; Furin-1ike; 1.

Pfam; PF00757; Furin-1ike; 1.

Pfam; PF01030; Recep\_L\_domain; 2.

Pfam; PF02757; YLP; 2.

Pfam; PF001030; Recep\_L\_domain; 2.

Pfam; PF01030; Recep\_L\_domain; 2.

Pfam; PF01030; Recep\_L\_domain; 2.

Pfam; PF00103; PROTEIN\_KINASE\_ATP; 1.

R SMART; SM00261; FU; 4.

SMART; SM00219; TyrKC; 1.

R SMART; SM00219; TyrKC; 1.

R PROSITE; PS0010; PROTEIN\_KINASE\_TYR; 1.

R PROSITE; PS0011; PROTEIN\_KINASE\_DOM; 1.

SMART; SM00219; TyrKC; 1.

PROSITE; PS00107; PROTEIN\_KINASE\_ATP; 1.

PROSITE; PS00109; PROTEIN\_KINASE\_TYR; 1.

PROSITE; PS00119; PROTEIN\_KINASE\_DOM; 1.

Transmembrane; Glycoprotein; Multigene family; Receptor; Signal; Transferase; Tyrosine-protein kinase; ATP-binding; Phosphorylation; Alternative splicing.

Alternative splicing.

25 POTENTIAL.

26 1308 RECEPTOR PROTEIN-TYROSINE KINASE ERBB-CHAIN

26 651 RECEPTOR PROTEIN-TYROSINE KINASE ERBB-DOMAIN

26 651 EXTRACELLULAR (POTENTIAL).

DOMAIN 676 1308 CYTOPLASMIC (POTENTIAL).

DOMAIN 186 334 CYS-RICH.

```
RESULT 8
ERB4_RAT
ID ERB4
AC Q629
                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 138
                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOD_RES
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NP_BIND
BINDING
ACT_SITE
DISULFID
 ERB4_RAT
Q62956; Q9Z2N7;
                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                          196
                                                                                                                                                 181
                                                                                                                                                                        136
                                                                                                                                                                                                121
                                                                           255
                                                                                                  240
                                                                                                                                                                                                                        85
                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                      25
                                                                                                                                                                                      LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNH 239
                                                                                                                                                                                                                      GYVLVALNOFRYLPLENLRIIRGTKLYEDRYALAIFLNYRKDGNF------GLQELG
                                                                                                                                                                                                                                    GYVLIAHNOVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                      SQSVCAGTENKLSSLSDLEQQYRALRKYYENCEVVMGNLEITSIEHNRDLSFLRSVREVT
                                                                                                                                                                                                                                                                                 STQVCTGTDMKLRLPASPETHLDMLRHLYQGĆQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                        SGACVTQCPQTFVYNPTTFQLEHNFNAKYTYGAFCVKKCPHNFV
                                                                                               SGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL
                                                                                                                                                                      LKNLTEILNGGVYVDQNKFLCYADTIHWQDIVRNPWPSNLTLVSTNGSSGCGRCHKSCTG

    RCWGPTENHCQTLTRTVCAEQCDGRCYGPYVSDCCHRECAGGCSGPKDTDCFACMNFND

                                                                                                                                                                                                                                                                                                                     h 45.1%;
Similarity 48.6%;
38; Conservative
                                                                                                                                                                                                                                                                                                                                                                      1308
                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                      ₹,
                                                                                                                                                                                                                                                                                                                                                                                              146807
                                                                                                                                                                                                                                                                                                                      37;
                                                                                                                                                                                                                                                                                                                                                                                                     PHOSPHORYLATION (AUTONINED (GLCNAC...
N-LINKED (GLCNAC...
                                                                                                                                                                                                                                                                                                                                                                      MΕ;
                                                                                                                                                                                                                                                                                                                     Score 716.5;
Pred. No. 5.96
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATP (BY SIMILARITY
ATP (BY SIMILARITY
BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                    NGPTSHDCIYYPWTGHSTLPQHA (IN ISOFORM JM-B). W; 5E4AE80985D88761 CR
              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N KINASE.
Y SIMILARITY).
Y SIMILARITY).
              1308
                                                                                                                                                                                                                                                                                                                     .9e-53;
es 98;
                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (AUTO-)
(AUTO-)
(AUTO-)
(AUTO-)
                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                      CRC64;
                                                                         298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL). (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
(POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (BY SIMILA)
(BY SIMILA)
(BY SIMILA)
(BY SIMILA)
(POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                           ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY).
SIMILARITY).
SIMILARITY).
SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                              IGSSIEDCIGLMD
                                                                                                                                                                                                                                                                                                                      11;
                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                      135
                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                     Ψ
  InterPro;
InterPro;
                                                                                                                                                       use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Neuregulins promote survival and growth c
Persistence of ErbB2 and ErbB4 expression
ventricular myocytes.";
J. Biol. Chem. 273:10261-10269(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Métazoa; Chórdata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-DEC-1998 (Rel. 37, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
15-JUN-2002 (Rel. 41, Last annotation update)
Receptor protein-tyrosine kinase erbB-4 precursor
ERBB4 OR TYRO-2.
Rattus norvegicus (Rat).
                                                                                                         EMBL; AF041838; AAD08899.1; -. EMBL; U52531; AAC53051.1; -. HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                    This
                                                                                                                                                                                                                                                                                                                                             <del>-</del> --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carroll S.L., Miller M.L., Frohnert E
"Expression of neuregulins and their ErbB3, is induced during Wallerian de J. Neurosci. 17:1642-1659(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-Sprague-Dawley;
MEDLINE-97184212; PubM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Neuron
                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                            <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                 -
                                                                                                                                                                                                                                                                                                                                                                                                        ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "An extended expressed in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Sciatic nerve;
MEDLINE=91222560; Pub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 848-901 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zhao Y.-Y., Sawyer D.R., Baliga
Marchionni M.A., Kelly R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=98221155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-Heart;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                        between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lai C., Lemke
                                                 InterPro;
                                                                                    InterPro;
                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                     FUNCTION: SPECIFICALLY BINDS AND IS ACTIVATED BY NEUREGULINS, NRG-2, NRG-3, HEPARIN-BINDING EGF-LIKE GROWTH FACTOR, BETACELULIN AND NTAK: INTERACTION MITH THESE FACTORS INDUCES CELL DIFFERENCIATION. NOT ACTIVATED BY EGF, TGF-A, AND AMPHIREGULIN (BY SIMILARITY). CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + protein
                                                                                                                                                                                                                                                                                 PTM:
                                                                                                                                                                                                                                                                                                       TISSUE SPECIFICITY: PREFERENTIALLY EXPRESSED I NERVOUS SYSTEM. EXHIBITS DISTINCT AND HIGHLY FOR EXPRESSION IN THE ADULT BRAIN, WHERE IT IS RETICULAR NUCLEUS OF THE THALLAMUS. VERY LOW L
                                                                                                                                                                                             European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                                                                                                                         RESIDUES (BY SIMILARITY).
SIMILARITY: BELONGS TO THE EGF
                                                                                                                                                                                                                                                                                                                                                        RECEPTORS (POTENTIAL).
SUBCELLULAR LOCATION: Type I membrane protein.
                                                                                                                                                                                                                                                                                                                                                                                tyrosine phosphate.
SUBUNIT: HOMODIMER OR HETERODIMER WITH
                                                                                                                                                                                                                                                                                              HEART
                                                                                                                                                                                                                      SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Y.-Y.,
PF00757;
PF00069;
PF01030;
PF02757;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sed in the verteb 6:691-704(1991).
                                             ; IPR000494; EGFR_L_domain.
; IPR000719; Euk_pkinase.
; IPR002717; Furin -like.
; IPR001245; Tyr_pkinase.
; IPR004019; YIP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FROM
                                                                                                                                                                                                                                                                                   LIGAND-BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OF 1031-1198 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              family of prote
the vertebrate
Furin-like; 1.
pkinase; 1.
Recep_L_domain;
YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     e-Dawley; TISSUE-Spinal cord;
212; PubMed-9030624;
Miller M.L., Frohnert P.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ດ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=9553078;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed=2025425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein-tyrosine kinase
brate nervous system.";
                                                                                                                                                                                                                                                                                 INCREASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostc
Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     growth of
                                                                                                                                                                                                                                                                                   PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             t P.W., Kim S.S., Corbo
ir putative receptors,
degeneration.";
                                                                                                                                                                                                                                                           RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Opel D.J.,
                                                                                                                                                                                               There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                        http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                 EACH OF
                                                                                                                                                                                                                                                           FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cardiac
                                                                                                                                                                                 Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          neonatal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genes
                                                                                                                                                                                                                                                                                                                    D IN THE DEVELOP
Y REGIONALIZED PA
IS MAINLY FOUND
                                                                                                                                                                                                                                                                                                          LEVELS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Han
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (B)
                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                 THE OTHER
                                                                                                                                                                                                                    the
                                                                                                                                                                                  bγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Corbett J.A.;
tors, ErbB2 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    myocytes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi
                                                                                                                                                                                                                                                                                   TYROSINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          differentially
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.7.1.112).
                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                          ï
                                                                                                                                                                                                                                                                                                                                             DEVELOPING
                                                                                                                                                                                                                        EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         adult
                                                                                                                                                                                                                       a collaboration -
                                                                                                                                                                                                                                                                                                        KIDNEY,
                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                 ERBB
                                                                                                                                                                                                                                                                                                                     D PATTERNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rattus
                                                                                                                                                                                             8 g
```

무 2 밁 Ş 밁 δÃ ₽ Š В 5

```
S
                          밁
                                        Ş
                                                         밁
                                                                         õ
                                                                                                                            Query Match
Best Local
                                                                                            Matches
                                                                                                                           CARBOHYD
CARBOHYD
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                  CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                             DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                   CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                              ACT_SITE
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                            MOD_RES
CARBOHYD
                                                                                                                                                                                                                                                                                                                             DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                              DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                        NP_BIND
                                                                                                                                                                                                                                           MOD_RES
                                                                                                                                                                                                                                                                    DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
Transmembrane; Glycoprotein; Multigene family; Rece
Transferase; Tyrosine-protein kinase; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS00107; PROTEIN_KINASE_ATP; PROSITE; PS50011; PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                             DISULFID
                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
          121
                          85
                                         19
                                                          25
LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                  STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                         GYVLVALNQFRYLPLENLRIIRGTKLYEDRYALAIFLNYRKDGNF-----
                                                          SQSVCAGTENKLSSLSDLEQQYRALRKYYENCEVVMGNLEITSIEHNRDLSFLRSIREVT
                                                                                           il Similarity
137; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SM00261; FU; 4.
SM00219; TyrKc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PR00109; TYRKINASE. PD000001; Euk_pkina
                                                                                                                                                                                                                            1167
1186
1256
1284
                                                                                                                           Ŗ,
                                                                                                                                   576
620
1062
1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euk_pkinase;
                                                                                                   44.5%;
                                                                                                                           146957
                                                                                           37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EXTRACELLULAR (POTENTIAL)
POTENTIAL.
CYTOPLASMIC (POTENTIAL).
CYS-RICH.
CYS-RICH.
                                                                                                                                                                                                                                                                    N-LINKED
S -> N (I
                                                                                                                                                                  N-LINKED
N-LINKED
                                                                                                  Score
Pred.
                                                                                                                                                                                                                                   PHOSPHORYLATION PHOSPHORYLATION
                                                                                                                                                                                                                                                   PHOSPHORYLATION PHOSPHORYLATION
                                                                                                                                                                                           N-LINKED
                                                                                                                                                                                                    N-LINKED
                                                                                                                                                                                                            N-LINKED
                                                                                                                                                                                                                    N-LINKED
                                                                                                                                                                                                                            N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RECEPTOR PROTEIN-TYROSINE KINASE ERBB-4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                   Y SIMILARITY
                                                                                          Mismatches
                                                                                                                           D944BB0996A08B41
                                                                                                                                 N (IN REF.
                                                                                                 2 706.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       (BY SIMILARITY). (BY SIMILARITY).
                                                                                                                                                                 KINASE
                                                                                                                                                  (GLCNAC. .
                                                                                                                                    (IN REF
                                                                                          .2e-52;
ies 99;
                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                                                  (AUTO-)
                                                                                                                                                                                                                                                   (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Receptor;
                                                                                                                                   ω
                                                                                          Indels
                                                                                                         Length
                                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       eptor; Signal;
Phosphorylation
                                                                                                                                                                                          (POTENTIAL).
(POTENTIAL).
                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                   (BY
(BY
(BY
                                                                                                                                                                                                                                  Y SIMILARITY).
Y SIMILARITY).
Y SIMILARITY).
Y SIMILARITY).
                         -GLQELG
                                                                                           11;
                                                                                         Gaps
                                                                         60
                                                         84
                                                                                          ω
```

```
δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ERB3_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                         "c-erbB3 gene encodes sécreted as well as transmemb tyrosine kinase.";
Biochem. Blophys. Res. Commun. 192:1189-1197(1993).
-!- FUNCTION: BINDS AND IS ACTIVATED BY NEUREGULINS-
-!- CATALYTIC ACTIVITY: ATP + a protein tyrosine -
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plowman G.D., Whitney G.S., Neubau
Todaro G.J., Shoyab M.;
Molecular cloning and expression
factor receptor-related gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.

MEDILINE-90083234; PubMed-2687875;

Kraus M.H., Issing W., Miki T., Popescu N.C., Aaronso "Isolation and characterization of ERBB3, a third mem ERBB/epidermal growth factor receptor family: evidenc overexpression in a subset of human mammary tumors."; Proc. Natl. Acad. Sci. U.S.A. 86:9193-9197(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-1991 (Rel. 18, Created)
01-MAY-1991 (Rel. 18, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Receptor protein-tyrosine kinase erbB-3 precursor
(c-erbB3) (Tyrosine kinase-type cell surface recep
                                                                                                                                                                                                                                                                                Katoh M., Yazaki Y.,
                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Placenta;
MEDLINE-93282822; PubMed-7685162;
                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (SHORT FORM)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-90311312; PubMed-2164210; Plowman G.D., Whitney G.S., Neubauer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ERBB3 OR HER3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P21860;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                            SHORT SECRETED FORM, EXIST DUE TO ALTERNATIVE SPLICING.

TISSUE SPECIFICITY: EPITHELIAL TISSUES AND BRAIN.

DOMAIN: THE CYTOPLASMIC PART OF THE RECEPTOR MAY INTERACT WITH
SH2 OR SH3 DOMAINS OF MANY SIGNAL-TRANSDUCING PROTEINS.

PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE RESID
AND PROMOTES ITS ASSOCIATION WITH THE PB5 SUBUNIT OF
PHOSPHATIDYLINOSITOL 3-KINASE (BY SIMILARITY).

DISEASE: OVEREXPRESSED IN A SUBSET OF HUMAN MAMMARY TUMORS.

SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                       SUBCELLULAR LOCATION: SECRETED (SHORT FORM)
                                                                                                                                                                                                                          ALTERNATIVE PRODUCTS: TWO FORMS,
                                                                                                                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SRCWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LKNLTEILNGGVYVDQNKFLCYADTIHWQDIVRNPWPSNMTLVSTIGSSGCGRCHKSCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SGACVTQCPQTFVYNPTTFQLEHNFNAKYTYGAFCVKKCPHNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -RCWGPTENHCQTLTRTVCAEQCDGRCYGPYVSDCCHRECAGGCSGPKDTDCFACMNFND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 G.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sci. U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                   Sugimura
                                                                                                                                                                                                                                                       TYPE
                                                                                                                                                                                                                                                                                                                                                                                 T:,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     87:4905-4909(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                      I MEMBRANE PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of
                                                                                                                                                                                                                                                                                                                                                                                Terada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1342
                                                                                                                                                                                                                           A LONG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             м.G.,
                                                                                                                                                                                                                                                                                                                         NEUREGULINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 additional epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                 X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₹
                                                                                                                                                                                                                                                                                  OTHER ERBB RECEPTORS
                                                                                                                                                                                                                                                                                                                                                                      transmembrane receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a third member o
ly: evidence for
tumore "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Green J.M.,
                                                                                                                                                                                                                           TRANSMEMBRANE FORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              298
                                                                                                                                                                                                                                                       (LONG FORM)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          283
                                                                                                                                                                                                                                                                                                              ADP
                                                                                                                                                                                                                                                                                                                            AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.7.1.112)
HER3).
                                                                                                                                                                                                                                                                                                              +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               McDonald V.L.,
                                                                                                                                                                                                                                                                                                                            NTAK
                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ō,
                                                      a collaboration
                                                                                                                                                         RESIDUES
                                                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239
                                                                                                                                                                                                                           ≻
```

use by modified entities between the Euro

European Bioinformatics Institute. The property of the property is a statement is not removed.

is not removed.

Usage

рy

and

for

'n

8 8

in no way

There are no rest

restrictions

TRMB 1.8

SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the  $\cdot$ EI

This

send

an

email to

license@isb-sib.ch).

```
InterPro; IPR000494; E InterPro; IPR000719; E InterPro; IPR002174; F InterPro; IPR001245; T
         VARSPLIC
CONFLICT
CONFLICT
SEQUENCE
                                                                                      CARBOHYD
CARBOHYD
VARSPLIC
                                                                                                                                                                                                                                                           DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                         DOMAIN
TRANSMEM
DOMAIN
DOMAIN
P_BININ
BININ
BITE
BISULFID
DISULFID
                                                                                                                                                                                             CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SMART; SM00261; FU; 3.
SMART; SM00210; TYPKC; 1.
PROSITE; PS00107; PROTEIN_KINASE_ATP;
PROSITE; PS00109; PROTEIN_KINASE_DOM;
PROSITE; PS50011; PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00059; pkinase; 1.
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain;
ProDom; PD000001; Euk_pkinase;
                                                                                                                              CARBOHYD
                                                                                                                                          CARBOHYD
                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alternative spl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSSP; P11362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    L; M29366; AAA35790.1
L; M34309; AAA35979.1
L; S61953; AAB26935.1
; A36223; A36223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                190151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HGNC: 3431;
            184
560
1064
1342
                                                                                       Tyrosine-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1FGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                licing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein;
N-LINKED (GLCNAC...) (POTENTIAL).

LINKED (GLCNAC...) (POTENTIAL).

N-LINKED (GLCNAC...) (POTENTIAL).

LINKED (GLCNAC...) (POTENTIAL).

LINKED (GLCNAC...) (POTENTIAL).

LILNKED (GLCNAC...) (POTENTIAL).

LILNKED (GLCNAC...) (POTENTIAL).

N-LINKED (GLCNAC...) (POTENTIAL).

N-LINKED (GLCNAC...) (POTENTIAL).

LINKED (GLCNAC...) (POTENTIAL).

MISCOVIENNOKICHMOTIOWEDIVERDRAETUVKDNGR SC. -> GOFPMVPSGLTPQPAQDWYLLDDDPRLLTLSASSK VPVTLAAV (IN SHORT ISOFORM).

E -> G (IN REF. 2).

E -> G (IN REF. 2).
            ₹
                                                                                       1342
560
1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ERBB3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EGFR_L_domain.
Euk_pkinase.
                                                                                                CYTOPLASMIC (POTENTIAL).

PROTEIN KINASE.

ATP (BY SIMILARITY).

ATP (BY SIMILARITY).

BY SIMILARITY.

BY SIMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
RECEPTOR PROTE
EXTRACELLULAR
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FALSE_NEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            e family; Receptor; Signal;
ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROTEIN-TYROSINE LULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KINASE ERBB-3
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                         REVISIONS
Hellyer N.
Submitted
                                                                                                                                                                                                                                Gene
This
                                                                                                                                                              SEQUENCE OF 922-1097 FROM N.A.
STRAIN-Sprague-Dawley; TISSUE-Sciatic
MEDLINE-97184212; PubMed-9030624;
                                                                                                                                                                                                                                        Hellyer N.J., Kim H.-H., G
"Cloning of the rat ErbB3
recombinant protein.";
Gene 165:279-284(1995).
                                                                                                                                                                                                                                                                             STRAIN-Sprague-Dawley;
MEDLINE-96096535; PubM
           -!- SIMILAF
                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _
               (POTENTIAL).

SUBCELLULAR LOCATION: Type I membrane protein.
SUBCELLULAR LOCATION: Type I membrane protein.
DOMAIN: THE CYTOPLASMIC PART OF THE RECEPTOR M.
SH2 OR SH3 DOMAINS OF MANY SIGNAL-TRANSDUCING PTM: LICAND-BINDING INCREASES PHOSPHORYLATION
AND PROMOTES ITS ASSOCIATION WITH THE P85 SUBU PHOSPHATIDYLINOSITOL 3-KINASE.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY
                                                                                         SUBUNIT: HETERODIMER WITH
                                                                                                   tyrosine phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GYVLVAMNEFSTLPLPNLRVVRGTQVYDGKFAIFVM----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SGACVPRCPQPLVYNKLTFQLEPNPHTKYQYGGVCVASCPHNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SRCWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SQAYCPGTLNGLSYTGDAENQYQTLYKLYERCEVVMGNLEIVLTGHNADLSFLQWIREVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RCWGPGSEDCQTLTKTICAPQCNGHCFGPNPNQCCHDECAGGCSGPQDTDCFACRHFND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 46.:
31; Conservative
                                                                                                                                                                                                    S TO 85; 513
N.J., Koland
d (DEC-2001)
                                                                                                                                                                                                                                                                    e-Dawley; TISSUE-Liver;
535; PubMed-8522190;
Kim H.-H., Greaves C.H
entry
                                                                                                                                                                                                     J.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43.2%;
                                                                                                                                                                                                     the EMBL/GenBank/DDBJ
copyright.
                                                                                                                                                                                                                      565
                                                                                                                                                                                                                                                           CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. 2.40
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 686;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                         EACH OF
                                                                                                                                                                                                                                                           es C
                                                                                                                                                                                                                                                           .H., Sierke S.L., characterization
ť
                                                                                          THE
                                                                                                                                                                           nerve;
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .4e-50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
produced
                                                                                          OTHER
                                    CING PROTEINS.
FION ON TYROSINE
SUBUNIT OF
                                                                                                                                                                                                      databases
                                                                                         ERBB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1342;
                                                              MAY INTERACT WITH THE
                                                                                                                                                                                                                                                                                                                                                                       (
당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 283
through
                                                                                                                                                                                                                                                           Koland of the
                                                                                                                                                                                                                                                                                                                          Euteleostom1;
; Murinae; Rat
                                                                                                                                               Corbétt J.A.;
tors, ErbB2 an
                                                                                          RECEPTORS
                                                                                                           + pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NSSHALRQLR
                                                                                                          protein
٥
                                                                                                                                                                                                                                                                    J.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
collaboration
                                                                                                                                                                                                                                                                                                                          Rattus
                                              RESIDUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ū
```

ween the European ğ

```
InterPro; irvovaliants, interPro; irvovaliants, interPro; irvovaliants, in Refam; pro0069; pkinase; 1.

R Pfam; pro00757; Furin-like; 1.

R Pfam; pro0757; Furin-like; 1.

R Pfam; pro1030; Recep_L_domain; 2.

Pfam; pro1030; Recep_L_domain; 2.

ProDom; pr00109; TyrKINASE.

DR ProDom; pr000001; Euk_pkinase; 1.

DR SMART; SM00219; TyrKC; 1.

DR SMART; SM00219; TyrKC; 1.

DR PROSITE; PS00109; PROTEIN_KINASE_ATP; FALSE_NEG.

DR PROSITE; PS00109; PROTEIN_KINASE_DOM; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.

Transmembrane; Glycoprotein; Multigene family; Receptor; Signal;

Transmembrane; Glycoprotein kinase; ATP-binding; Phosphorylation.
                                                                     Query Match
Best Local S
Matches 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        modified and this entitles requires a cor send an email
                                                                                 CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CONFLICT
                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                    ACT_SITE
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U29339; AAC28498.2; -. EMBL; U52530; AAC53050.1; -. HSSP; P11362; 1F8C, HSSP; P11362; IPR000494; EGFR_L_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
 127; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the Swiss Institute of Bioinformatics and the EMBL outstation - pean Bioinformatics Institute. There are no restrictions on its non-profit institutions as long as its content is in no way and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR000719; Euk_pkinase.
IPR002174; Furin-like.
IPR001245; Tyr_pkinase.
   Conservative
                                                                 ₹,
                                                                                 41.5%;
                                                                 147545
                                                               PROTEIN KI
ATP (BY SI
ATP (BY SIMILAR
BY SIM
                                Score 658;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
CYTOPLASMIC (POTENTIAL).
CYS-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RECEPTOR PROTEIN-TYROSINE KINASE ERBB-3. EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                 Y SIMILARITY
Mismatches
                                                                 OAA5F2402BBFDF1E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (BY SIMILARITY). (BY SIMILARITY).
                 No.
                                                                                 (IN
                                                                                           D (GLCNAC.
D (GLCNAC.
D (GLCNAC.
D (GLCNAC.
D (GLCNAC.
D (GLCNAC.
) (GLCNAC.
) (GLCNAC.
) (GLCNAC.
) (GLCNAC.
) (GLCNAC.
                                                                                  (GLCNAC.
IN REF. 3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KINASE.
                 ហ
                                  DВ
                 6e-48;
101;
                             Length 1339;
Indels
                                                                 CRC64;
                                                                                                                              (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                (POTENTIAL)
14;
Gaps
<u>ن</u>
```

```
RESULT 11
XMRK_XIPMA
  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Бр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
InterPro; IPRO0
InterPro; IPRO0
InterPro; IPRO0
InterPro; IPRO0
Pfam; PFO0069;
Pfam; PF00757;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-JAN-1990
16-OCT-2001
15-JUN-2002
                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entrepean Bioinformatics Institute. There are no restructed by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entitles requires a license agreement (See http://www.isb-sor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xiphophorus maculatus (Southern platyfish).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Actinopterygii; Neopterygii; Peleostei; Buteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Atherinc
Cyprinodontiformes; Poeciliidae; Xiphophorus.
                                                                  InterPro;
InterPro;
                                                                                            PIR; :
                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                                                                   Nature
[2]
                                                                                                                                                                                                                                                                                                              Schartl M.;
Submitted (JUL-2000)
                                                                                                                                                                                                                                                                                                                                                                    REVISION TO 515.
                                                                                                                                                                                                                                                                                                                                                                                           "Novel putative receptor tyrosine kinase inducing Tu locus in Xiphophorus."; nature 341:415-421(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                     Wittbrodt J., Adam D., Malitschek B., Telling A., Robertson S.M., Schartl M
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
MEDLINE-90015140; Pubmed-2797166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XMRK OR TU.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Melanoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        XMRK_XIPMA
P13388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=8083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25
                                                                                  CAA34770.2;
R; S06142; S06142.
P; P11362; 1FCK
                                                                                                                                                                                                                                                           SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY
                                                                                                                                                                                                                                                                        tyrosine phosphate.
SUBCELLULAR LOCATION: Type I membrane protein.
DISEASE: INVOLVED IN PIGMENT CELLS MALIGNANT MELANCHAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SRCWGESSEDCOSLTRTVCAGGC-ARCKGPLPTDCCCHEQCAAGCTGPKHSDCLACLHFNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SGACVPRCPEPLVYNKLTFQLEPNPHTKYQYGGVCVASCPHNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FTQLTEILSGGVYIEKNDKLCHMDTIDWRDIVRVR---GAEIVVKNNGANCPPCHEVCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GYVLIAHNOVROVPLORLRIVRGTOLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SQAVCPGTLNGLSVTGDADNQYQTLYKLYEKCEVVMGNLEIVLTGHNADLSFLQWIREVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         - RCWGPGPDDCQILTKTICAPQCNGRCFGPNPNQCCHDECAGGCSGPQDTDCFACRRFND
                     j IPRO00494; EGFR_L_domain.
j IPRO00719; Euk_pkinase.
j IPRO027174; Furin-like.
j IPR002290; Ser_thr_pkinase.
j IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 990 (Rel. 13, Created)
001 (Rel. 40, Last sequence update)
002 (Rel. 41, Last annotation update)
receptor protein-tyrosine kinase precursor (EC
  pkinase; 1.
Furin-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                          .'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maueler W., Raulf
                                                                                                                                                                                                                                                                                                                                                                                                                       encoded by the melanoma-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₹
                                                                                                                                                                http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Atherinomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ---NSSHALRQLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Neoteleoste1;
                                                                                                                                                                                                      restrictions
                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.7:1.112)
                                                                                                                                                                                                                    EMBL
                                                                                                                                                                                                                                                                                                               protein
                                                                                                                                                                                                                       a collaboration -
                                                                                                                                                                                                                                                                                                                                ACTIVITY.
                                                                                                                                                                 .ch/announce/
                                                                                                                                                                                                                     outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                          9
                                                                                                                                                                                                        9
```

```
õ
                             S
                                                                             В
                                                                                                                                                            В
                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                         SON DE PROPRE A PROPR
  뭐
                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                            Query
Best L
                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NR_BIND
BIND
BIND
BISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SMART; SM00220; S_TKC; 1.

SMART; SM00219; TyrKC; 1.

PROSITE; PS00101; PROTEIN_KINASE_ATP;

PROSITE; PS00109; PROTEIN_KINASE_TYR;

PROSITE; PS50011; PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tyrosine-protein kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Transmembrane; Glycoprotein;
                                                                               144
                                                                                                                     123
                                                                                                                                                            87
                                                                                                                                                                                                    63
                                                                                                                                                                                                                                            30
                                                                                                                                                                                                                                                                                  w
                                                                             QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELIYLPTNASLSFLQDIQEVQGY
CWAPGPGHCQKFTKLLCAEQCNRRCRGPKPIDCCNEHCAGGCTGPRATDCLACRDFNDDG
                                                                                                                                                                                 VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR
                                     CWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHSG
                                                                                                                                                        VLTAMNEVSTIPLVNLRLIRGQNLYEGNETLLVMSNYQK-NPSSP--DVYQVGLKQLQLS
                                                                                                                                                                                                                                          KVCQGTSNQMTM----LDNHYLKMKKMYSGCNVVLENLEITYTQENQDLSFLQSIQEVGGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PF01030; Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SM00261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PR00109; T
                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYRKINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25
1167
                                                                                                                                                                                                                                                                                                                                                                                                                          Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                            40.48;
                                                                                                                                                                                                                                                                                                                                                                                                       129934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                 EXTRACELLULAR (
POTENTIAL.

CYTOPLASMIC (PC
PROTEIN KINASE
ATP (BY SIMILARITY.
BY SIMILARITY
BY SIMILAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INASE_ATP; 1.
INASE_TYR; 1.
INASE_DOM; 1.
Receptor; Signal; Transfera
P-binding; Phosphorylation; P
                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MELANOMA
KINASE.
                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                       INKED (GLCNAC. 4793E0749DC1D55A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BY SIMILARITY). (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                              No.
                                                                                                                                                                                                                                                                                                                                                             640.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RECEPTOR PROTEIN-TYROSINE
                                                                                                                                                                                                                                                                                                                                                                                                                                            (GLCNAC.
                                                                                                                                                                                                                                                                                                                                              4e-46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                 ВB
                                                                                                                                                                                                                                                                                                                         112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transferase,
                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Proto-oncogene.
                                                                                                                                                                                                                                                                                                                                                                 1167;
                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                            86
                                                                                                                                                                                                                                                                                  62
                                                                             203
                                                                                                                                                                                                                                                                                                                         4.
```

```
TO SECRET SERVICES OF THE SECRET SECRET SERVICES OF THE SECRET SECR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA Amanatides P.G., Scherer S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S.; Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayrakcaroglu L., Beasley E.M.,
Beeson K.Y., Benos P.V., Bernan B.P., Bhandari D., Bolshakov S.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
Charly J.M., Cawley S., Dahlke C., Davsteth P., Brottler P.,
RA Cherry J.M., Cawley S., Dahlke C., Davstes P.,
RA Ge Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Molecular analysis of that several genetical subdomairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGFR_DROME STANDARD: PRT; 1426 AA. P04412; 061601; Q982G0; P81868; 13-AUG-1987 (Rel. 05, Created) 15-DEC-1998 (Rel. 37, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) Epidermal growth factor receptor precursor (EC 2 (Gurken receptor) (Torpedo protein) (Drosophila EGFR OR TOP OR C-ERBB OR DER OR CG10079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REVISIONS.
Clifford R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             subdomains of the receptor protein."; Genetics 137:531-550(1994).

EVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-99102120; PubMed-9882502;
Lesokhin A.M., Yu S.-Y., Katz J., Baker N.
"Several levels of EGF receptor signaling
specification in wild-type, Ellipse, and n
Dev. Biol. 205:129-144(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
ANALYSIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-94350209; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster (Fruit fly).

Eukaryota; Metažoa; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; ...

Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;

Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A., CHARACTERIZATION, STRAIN-Oregon-R; TISSUE-Embryo; MEDLINE-87002474; PubMed-3093080;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "The
                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schejter E.D., Segal D., Glazer L., Shilo "Allernative 5' exons and tissue-specific Drosophila EGF receptor homolog transcript Ceil 46:1091-1101(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A., MEDLINE-85124611; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=7227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hormone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Livneh E., Glazer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 eh E., Glazer L., Segal D., Schlessinger J.,
Drosophila EGF receptor gene homolog: conser
one binding and kinase domains.";
40:599-607(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCKDTCPPPKIXDIVSHQVVDNPNIKYTFGAACVKECPSNYVVTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FROM N.A. (ISOFORM TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R., Schupbach (
(MAR-1998) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . (ISOFORMS TYPES PubMed=8070664;
                                                                                                                                                                                                                                                                                                                                                                                   PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ., AND ALTERNATIVE SPLICING PubMed=2982499;
                                                                                                                                                                                                                                                                                                                                                                                                                                     (ISOFORM TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             n T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e-specific expression transcripts.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           I),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chlessinger J., Shilo B.-2.;
homolog: conservation of both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N.E.;

j during photoreceptor
null mutant Drosophila.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           receptor homolog :
of alleles cluster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALTERNATIVE SPLICING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPECIFICITY, AND MUTATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.7.1.112)
a relative o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of ERBB)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       reveals
```

This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the El the European Bioinformatics Institute. There are no rest

non-profit

institutions as long

rmatics and the I

restrictions on in

in no way

a collaboration

Usage

```
RA HOSTID D. HOUSTON K.A., HOWLAND T.J., Wel M.-H., IDSQWAM C. J., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z., RA Lisko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X., RA Liu X., Mattel B., McIntosh T.C., McLeod M.P., McPherson D., RA Liu X., Mattel B., McIntosh T.C., McLeod M.P., McPherson D.L., RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A., RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Paclab J.M., RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Paclab J.M., RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Paclab J.M., RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G., RA Reinert K., Remington K., Sunders R.D.C., Scheeler F., Shen H., RA Shue B.C., Siden-Klamos I., Simpson M., Skupski M.P., Smith T., RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E., RA Sylrskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X., RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Wang Z.-Y., Chong F., Zhong W., Zhou S., Zhu X., Smith H.O., RA Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.; "The genome sequence of Drosophila melanogaster."; RL Science 287:2185-2195(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-Daekwanryeong;
MEDLINE-85137938; PubMed-2983232;
Madsworth S.C., Vincent W.S. III, Bilodeau-Wentworth D.;
"A Drosophila genomic sequence with homology to human epidermal growth factor receptor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Glodek
Harris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Perrimon N., Perkins L.A.;
"There must be 50 ways to rule the signal: the case
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     *Raz E., Schejter E.D., Shilo B.Z.;
*Interallelic complementation among I
the mechanism of signal transduction
Genetics 129:191-201(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Durbin
Fosler
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ANALYSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 1133-1137; 1155-1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 959-1078 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=97248481; PubMed=9094709;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-92038942; PubMed-1936959;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature 314:178-180(1985).
                                                                                                                                                                                                                                                                                                                                                                                       CATALIAL ...
CONTROL ...
CONTROL ...
SUBCELLULAR LOCATION: ISOFORMS TYPE
SUBCELLULAR LOCATION: ISOFORM TYPE III
                                                                        UNIFORM EXPRESSION IS SEEN IN WING DISKS, GENITAL DISK, ANLAGEN OF TESTIS AND OVARY, AND BRAIN CORTEX. IN EYES ANTENNA DISK, HIGHEST EXPRESSION IS ANTERIOR TO MORPHOGENETIC FURROW, LEVELS REMAIN HIGH IN PHOTORECEPTOR PRECURSOR CELLS. THIS PATTERN IS REVERSED IN POSTERIOR EYE DISK. IN ADDULTS EXPRESSION IS HIGH IN BRAIN CORTEX
                                                                                                                                                                                                                                                             ALTERNATIVE PRODUCTS: 3 ISOFORMS; TYPE I (SHOWN HERE), TYPE III; ARE PRODUCED BY ALTERNATIVE SPLICING. TISSUE SPECIFICITY: UBIQUITOUSLY EXPRESSED IN EMBRYOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATALYTIC ACTIVITY: ATP + a protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: BINDS TO FOUR LIGANDS: SPITZ, GURKEN, VEIN AND ARGOS, WHICH IS AN ANTAGONIST. TRANSDUCES THE SIGNAL THROUGH THE RAS-RAMARK PATHWAY. INVOLVED IN A MYRIAD OF DEVELOPMENTAL DECISIONS. CRITICAL FOR THE PROLLTERATION OF IMAGINAL TISSUES, AND FOR THE DETERMINATION OF BOTH THE ANTERO-POSTERIOR AND DORSO-VENTRAL POLARISTIES OF THE COCYTE. IN THE EMBRYO, PLAYS A ROLE IN THE ESTABLISHMENT OF VENTRAL CELL FATES, MAINTENANCE OF AMNIOSEROSA AND VENTRAL NEUROECTODERMAL CELLS, GERM BAND RETRACTION, CELL FATER SPECIFICATION IN THE CENTRAL NERVOUS SYSTEM AND PRODUCTION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89:13-16(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C., Gabrielian A.E., Garg N.S., Gelbart W.M.
A., Gong F., Gorrell J.H., Gu Z., Guan P., Har
N.L., Harvey D., Heiman T.J., Hernandez J.R.,
D., Houston K.A., Howland T.J., Wel M.-H., The
           BELONGS
AND ABDOMINAL GANGLIA.
BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DER/flb alleles: implications for by receptor-tyrosine kinases.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1209-1216 FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                  I AND TYPE II ARE TYPE IS A TYPE III MEMBRANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tyrosine -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M., Glasser
Harris M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          s.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADP +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of the Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Houck J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fleischmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AND MUTATION
                                                                                                                                                                                                                                                                        IN LARVAE
                                                                                                                                                                                                                                                                                                                                                 TYPE II AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HE RAS-RAF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Σ.
```

```
밁
                            δ
                                                                     밁
                                                                                                  Š
                                                                                                                                                                                                                    Query Match
Best Local S
Matches 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; K03054; AAA51462.1; --
EMBL; K03417; AAA51460.1; --
EMBL; K03418; AAA51965.1; --
EMBL; K03418; AAA51961.1; --
EMBL; AF109077; AAD26132.1; --
EMBL; AF109078; AAD26132.1; --
EMBL; AF109078; AAD26133.1; --
EMBL; AF109078; AAD26133.1; --
EMBL; AF109081; AAD26133.1; --
EMBL; AF109081; AAD26133.1; --
EMBL; AF109081; AAD26131.1; --
EMBL; AF109080; AAD26135.1; --
EMBL; X78918; CAA555521.1; --
EMBL; X78919; CAA55522.1; --
EMBL; X78919; CAA55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FlyBase; FBgn0003731; I
Interpro; IPR000494; EC
Interpro; IPR000719; Ev
Interpro; IPR002174; Ev
Interpro; IPR0021745; Ty
                                                                                                                                                                                                             NP_BIND
BINDING
ACT_SITE
MOD_RES
                                                                                                                                                                                                                                                                                        DOMAIN
TRANSMEM
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PRO0109; TYRKINASE.
PYODOM: PD00001; EUK_PKINASE;
SMART; SM00261; FU; 7.
SMART; SM00219; TyrKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                              Tyrosine-protein
Developmental pro
SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00109; PROTEIN_KINASE_DOM; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; pF00069; pkinase; 1.
Pfam; pF00757; Furin-like; 1.
Pfam; pF01030; Recep_L_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HSSP; P11362; 1
160
                                                                     100
                                                                                                                                            Local Si
hes 110;
                                 62 YVLIAHNQVRQVPLQRLRIVRGTQLF----EDNYALAVLDNGDPLNNTTPVTGASPGGL
                                                                                                        w
                                                                   Similarity
                                                                                                                                                                                                                   31
869
890
938
944
971
1063
                                                                                                                                            Conservative
                                                                                                                                                                                                           1 protein.
1 30
31 1426
1 868
9 889
9 1426
1198
1198
1198
1063
971
1063
                                                                                                                                                                                                                                                                                                                                                                                                             Glycoprotein;
in kinase; ATP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAC08536.1;
AAC08536.1;
AAC08535.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAC08535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EGFR_L_domain.
Euk_pkinase.
Furin-like.
                                                                                                                                                            33.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tyr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Egfr.
                                                                                                                                                                                                                                                                                                                                                                                                                   ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOINED
                                                                                                                                          Score 535; DB Pred. No. 1.6e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOINED
                                                                                                                                                                                                                                ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Receptor;
                                                                                                                                                                                                                 PHOSPHORYLATION (BY PKC) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                        CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                          EPIDERMAL GROWTH FACTOR RECEPTOR. EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                             POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                               Signal;
                                                                                                                                                                                                                                                                                                                                                                                                             Phosphorylation; Tr
Signal; Alternative
                                                                                                                                                           DB 1;
.6e-37;
                                                                                                                                                                                                                                                                                                          (POTENTIAL).
                                                                                                                                                                           Length 1426;
                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                               Transferase;
ve splicing;
                                                                                                                                          Gaps
203
                                   116
                                                                                                        6
                                                                                                                                            6
```

```
LT23_CT 13
LT23_C
AC P24348
DT 01-MAR
DT 15-JUN
CC Rhabdiy
OC Rhabdiy
OC Rhabdiy
RA MEDLIN
RA MEDLIN
RA SAKAI
RT 1nduct
RT 1nd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LT23_CABEL STANDARD;
P24348;
01-MAR-1992 (Rel. 21, Created)
01-MAR-1992 (Rel. 21, Last sequence
11-JUN-2002 (Rel. 41, Last annotati
Let-23 receptor protein-tyrosine ki
LET-23 OR KIN-7 OR ZK1067.1.
                                                                                                                                                                                      SUBCERPORTS
STRAIN-Bristol N2;
STRAIN-Bristol N2;
MEDLINE-99287744; PubMed-10359617;
MEDLINE-99287744; Benard C., Barnes T., Hekimi S., Kim S.K.;
Whitfield C.W., Benard C., Barnes T., Hekimi S., Kim S.K.;
"Basolateral localization of the Caenorhabditis elegans epidermal "Basolateral localization of the Caenorhabditis elegans epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE-91080919; P Aroian R.V., Koga M The let-23 gene ne
                                                                                                                                                                                                                                                                                                                                                            Aroian R.V., Les G.M., Sternberg P.W.;
"Mutations in the Caenorhabditis elegans let-23 elements important for cell-type specificity and EMBO J. 13:360-366(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN-Bristol N2;
MEDLINE-96177760; PubMed-8604137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-Bristol Thomas K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sakai T., Koga M., Ohshima "Genomic structure and 5' ; the nematode C. elegans.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-94147981;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 induction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mol.
                                                                      FUNCTION: Tyrosine kinase receptor required fo vulval differentiation. Possible receptor for required for vulval development. Activated by way of let-60 RAS. The lin-3/let-23 pair is a of the mammalian neuregulin-ERBB network.

CATALYTIC ACTIVITY: ATP + a protein tyrosine -
 tyrosine phosphate.
SUBCELLULAR LOCATION: Type I membrane protein.
apical membrane of cell junctions in epithelia.
cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KNEFDEAVSKEECPPMRKYNPTTYVLETNPEGKYAYGATCVKECP-GHLLRDNGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS: | | | | : | | | | : | | | : | | | : | | | : |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SCTHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MCKGSRCWGESSEDCQSLTRTVCAGGCA--RCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YTLEIPDLRDVLNGQVGFHNNYNLCHMRTIQWSEIVSNGTDAYYNYDFTAPERECPKCHE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lon encodes a tyros
348:693-699(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MAR-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -CWGEGPKNCQKFSKLTCSPQCAGGRCYGPKPRECCHLFCAGGCTGPTQKDCIAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        256:548-555(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed-1979659;

M., Mendel J.E., Ohshima Y., Sternucky

necessary for Caenorhabditis elegans vulval

necessary for the EGF receptor subf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             necessary fo
                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed-8313880;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ៥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
in-tyrosine kinase precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         regulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                          protein tyrosine =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           regions
                   in epithelial vulval precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rhabditida;
                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             databases
                                                                                                              d for the induction of the inductive signs by lin-3 and acts by a simplified version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sternberg P.W.;
                                                                                                                                                                                                                                                                                                                                                                               EGFR-like gene define d function.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (EC
                                         Basolateral and
                                                                            ADP +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             let-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.7.1.112).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rhabditoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             subfamily.";
                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 376
                                                                                                                version
                                                                                                                                                     signal
                                                                                                                                                                       of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    263
   ACT SITE
DACT SITE
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Signal
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WormPep;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
```

POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.

SIMILARITY SIMILARITY

```
ProDom; PDUVUVVI, 5
SMART; SM00261; FU; 6.
SMART; SM00219; TyrKo; 1.
PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF01030; Recep_L_domain; ProDom; PD000001; Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00069; pkinase; 1.
Pfam; PF00757; Furin-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000494; EGFR_L_domain InterPro; IPR000719; Euk_pkinase. InterPro; IPR002174; Futin-like. InterPro; IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HSSP; P11362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE SPECIFICITY: Vulval precursor cells.
DEVELOPMENTAL STAGE: Expressed during L2 and L'
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S13422;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               X57767; CAA40919.1;
D63426; BAA09729.1;
Z70038; CAA93882.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZK1067.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     non-profit
S13422.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1FGK.
CE03840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ALT_SEQ. ; ALT_INIT.
                                                                                          LET-23 RECEPTO
EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                              CYTOPLASMIC PROTEIN KINA
                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL
                                                                                                             Y SIMILARITY
                                                                                                                                                                                                                                                                                                     SIMILARITY
                                                                                                                                                                                                                                                                                                                                   (BY
                                                                                                                                                                                                                                                                                                                         N KINASE.
Y SIMILARITY).
Y SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                         RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                               Developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                             OR PROTEIN-TYROSINE (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                      omental protein;
Glycoprotein; Receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ւ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    larval
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    stages.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
```

```
RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ILPR_BRALA STAN

002466;

01-NOV-1997 (Rel. 3

01-NOV-1997 (Rel. 3

15-JUN-2002 (Rel. 4

15-JUN-2002 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                      )02466;

)1-NOV-1997 (Rel. 35, Created)

01-NOV-1997 (Rel. 35, Last sequence update)

15-JUN-2002 (Rel. 41, Last annotation update)

15-JUN-2002 (Rel. 41, Last annotation update)

Insulin-like peptide receptor precursor (EC 2.7.1.112) (ILP receptor precursor)

Branchiostoma lanceolatum (Common lancelet) (Amphioxus).

Principal Metazoa; Chordata; Cephalochordata; Branchiostomidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARIANT
VARIANT
VARIANT
VARIANT
VARIANT
SEQUENCE
                                                                                                                                                                                                                                             "Structure and expression of the insulin-like amphloxus.";
                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDLINE-96408719; PubMed-8813726;
Pashmforoush M., Chan S.J., Stein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۵
TYPOSINE PHOSPHATE.
SUBUNIT: PROBABLE TETRAMER OF 2 ALPHA AND 2 BETA CHAINS LINKED BY
DISULFIDE BONDS. THE ALPHA CHAINS CONTRIBUTE TO THE FORMATION OF
THE LICAND-BINDING DOMAIN, WHILE THE BETA CHAIN CARRY THE KINASE
DOMAIN (BY SIMILARITY).
                                                                                                                                  FUNCTION: THIS RECEPTOR BINDS TO THE INSULIN HAS A TYROSINE-PROTEIN KINASE ACTIVITY. CATALYTIC ACTIVITY: ATP + a protein tyrosine
                                                                                                                                                                                                                         Endocrinol. 10:857-866(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GNHCVKECP 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GASCVTACP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TLIDTNRSRACH-----PCSPMCKGSRCWGESSEDCQSLTRTVCAGGCARC---KGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCY-QDTILWKDIFHKNNQLAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----ASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LCSGTTNGISRYGTGNI-LEDLETMYRGCRRVYGNLZITWIEANEIKKWRESTNSTVDPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SYECCDSACLGGCTGHGPKNCIACSKYELDGICIETCPSRKIFNHKTGRLVFNPDGRYQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KVETTNSHQHCYQNGKSMAKCHESC-NDKCWGSGDNDCQRVYRSVCPKSCSQCFYSNSTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----VHEVVMRELRVIRNGSVTIQDNPKMCYIGDKIDWKELLYDPD--VQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NEDSPLKSINFFONLEEIRGSLIIYRANIQKISFPRLRVIYGDEVFHDN-ALYIHKNDK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          368
469
700
753
1065
1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ŗ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              805
91
169
256
376
561
655
746
746
368
469
700
700
700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          150510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL.
N-LINKED ((
C -> Y (IN)
C -> Y 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 396.5;
Pred. No. 8e-2
54; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -> W (IN MN23).

-> Y (IN SY11).

-> I (IN SY16).

-> E (IN SY7).

6B0307EE53EEFA99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        396.5; DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ED (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ΩÏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .7.1.112) (ILP receptor).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                            peptide receptor
                                                                                                                                       ١,
                                                                                                                                                                                             RELATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                       ADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                       +
                                                                                                                                                                                             PEPTIDE
                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
```

```
Query Match
Best Local S
Matches 92
                                                                              CARBOHYD
CARBOHYD
                                                                                                                                         CARBOHYD
CARBOHYD
                                                                                                                                                                     CARBOHYD
CARBOHYD
                                                                                                                                                                                                                               NP_BIND
                                                                                                                                                                                                            ACT_SITE
                                                                                                                                                                                                                                                   DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
HSSP;
                                                                                                                                                                                                                                                                                                                                                                     PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
PROSITE; PS00239; RECEPTOR_TYR_KIN_II; 1
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                            SMART; SM00060;
SMART; SM00261;
SMART; SM00219;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00757; Furin-like; 1.
pfam; PF01030; Recep_L_domain;
PRINTS; PR00014; FNTYPEIII.
PRINTS; PR00109; TYEKINASE.
ProDom; PD000001; Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         use by non-profit institutions as long modified and this statement is not removed: entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                         Glycoprotein; SIGNAL
                                                           CARBOHYD
                                                                                                  CARBOHYD
                                                                                                            CARBOHYD
                                                                                                                      CARBOHYD
                                                                                                                                CARBOHYD
                                                                                                                                                             CARBOHYD
                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                             PROPEP
                                                                                                                                                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                                                                                                                              Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ween the Swiss Institute of Bioinf
European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBCELLULAR LOCATION: Type I membrane protein (By similarity). SIMILARITY: BELONGS TO THE TYR FAMILY OF PROTEIN KINASES. INSURECEPTOR SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S83394; AAB50848.1;
P06213; 1IRK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PF00041; fn3;
            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR003962;
IPR002174;
IPR002011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR000494;
IPR000719;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR001245;
                                        137
278
483
599
617
666
666
711
732
732
736
816
885
                                                                                                                                                                                                                                                                                                                                                             Tyrosine-protein kinase; Receptor; Transmembrane;
                                                                                                                                                                                                                                                                                                                                                  ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                     FN3; 3.
FU; 1.
                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                             TyrKc; 1
                                                                                                                                                                                                                                                                                                  720
1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FnIII_repeat.
Furin-like.
RTKinaseII.
          19.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tyr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euk_pkinase.
FN_III.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGFR_L_domain.
                                         154104
                                                                                                                                                                                                                                                                                                                                                  Phosphorylation;
                                     N-LINKED (GLCNAC...)
                                         ¥.
                                                                                                                                         N-LINKED
                                                                                                                                                             N-LINKED
                                                                                                                                                                                                                      ATP
ATP
BY S
            Pred.
                   Score 315.5;
                                                                                                                      N-LINKED
                                                                                                                                 N-LINKED
                                                                                                                                                                                N-LINKED
                                                                                                                                                                                         N-LINKED
                                                                                                                                                                                                    N-LINKED
                                                                                                                                                                                                                                                            CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                       CHAIN (POTENTIAL).
                                                                                                                                                                                                             PHOSPHORYLATION
                                                                                                                                                                                                                                                                       POTENTIAL
                                                                                                                                                                                                                                                                                EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                  INSULIN-LIKE PEPTIDE RECEPTOR,
                                                                                                                                                                                                                                                                                                              POTENTIAL.
                                                                                                                                                                                                                                                                                                                               INSULIN-LIKE PEPTIDE RECEPTOR,
                                                                                                                                                                                                                       SIMILARITY
                                                                                                                                                                                                                               (BY SIMILARITY). (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                              YR; 1.
YR; 1.
LII; 1.
                                                                                                                     (GLCNAC
(GLCNAC
(GLCNAC
                                                                                                                                                                     (GLCNAC. .
                                                                                                                                                                                                  (GLCNAC.
                                                                                                                                                             (GLCNAC. .
                                                                                                                                                                                         (GLCNAC. .
            6.1e-19
                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nere are no rest
as its content
                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                   Signal.
                                                                                                                                                                                                             (AUTO-) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Usage
                    ۲.
                    Length
                                         CRC64;
                                                                                                                                                            (POTENTIAL). (POTENTIAL).
                                                          (POTENTIAL)
                                                                                (POTENTIAL)
                                                                                         (POTENTIAL)
                                                                                                  (POTENTIAL)
                                                                                                                       (POTENTIAL)
                                                                                                                                (POTENTIAL)
                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                    (POTENTIAL)
                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                     1363;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INSULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
```

Conservative

39;

Mismatches · 109;

Indels

79;

Gaps

16;

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                     InterPro; IPR002174; Futin-like.
InterPro; IPR002011; RTKinaseII.
InterPro; IPR001245; Tyr_pkinase.
Pfam; PF00041; fn3; 1.
Pfam; PF00069; pkinase; 1.
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HTK7_HYDAT
Q25197;
Q1-NOV-1997
                                                                                                                                                                                                                             use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See
                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                <del>:</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Steele R.E., Mai N.H., Submitted (APR-1991) t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1997 (Rel. 35,
01-NOV-1997 (Rel. 35,
15-JUN-2002 (Rel. 41,
Putative insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HYDAT
          PRINTS;
                                                                                                                                           InterPro;
                                                                                                                                                        InterPro;
                                                                                                                                                                        HSSP; P06213;
                                                                                                                                                                                    EMBL; M64612; AAA68205.1;
                                                                                                                                                                                                                                                                                         between
                                                                                                                                                                                                                                                                                                        This
                                                                                                                                                                                                                                                                                                                                                                                                             ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=6087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Hydridae; Hydra.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hydra attenuata (Hydra) (Hydra vulgaris).
Eukaryota; Metazoa; Cnidaria; Hydrozoa; Hydroida;
                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \omega
                                                                                                                                                                                                                 tities requires a license agreement (S send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                  JENCE FROM N.A.

31e R.E., Mai N.H., Lieu P., Shenk M.A.;

nitted (APR-1991) to the EMBL/GenBank/DDBJ databases.

FUNCTION: THIS RECEPTOR PROBABLY BINDS AN INSULIN RELATED PROTEIN FUNCTION: THIS RECEPTOR PROBABLY BINDS AN INSULIN RELATED PROTEIN AND HAS A TYROSINE-PROTEIN KINASE ACTIVITY (BY SIMILARITY).

AND HAS A TYROSINE-PROTEIN KINASE ACTIVITY (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: Type I membrane protein (By similarity). TISSUE SPECIFICITY: EXPRESSED IN DIVIDING EPITHELIAL CELLS. SIMILARITY: BELONGS TO THE TYR FAMILY OF PROTEIN KINASES. INSU
                                                                                                                                                                                                                                                                                                                                                                                          CATALYTIC ACTIVITY: ATP tyrosine phosphate.
                                                                                                                                                                                                                                                         European Bioinformatics Institute. There by non-profit institutions as long as
                                                                                                                                                                                                                                                                                                                                     RECEPTOR SUBFAMILY.
                                                                                                                                                                                                                                                                                      SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HRKCIPECPSGY-TTDINN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENCIGGCDGPTERDCVACKYFVHNGECLIQCPPDTYQYKDRRCITEEECPNTTNSVWKLH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTD----TFESMPNPEGRY--TF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNREEEECVNFCPGRCRIKHPVLQDLCWAE--EHCQKVCPESCLGNCR----DGISGCCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DTNRSRAC-HPCSPMCK-----GSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIF---HKNNQLALTLI 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GLAFPNLVEITDYFLLYRVRGLTNLSELFPNLAVIRGTNLF-FNYALVVFEMLD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LIAHNQVRQVP----LQRLR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ICDSMDIRNR------VSNLRQL-ENCTVIEGYLQI-----LLIDFAEEQDYS
                                                                                                                           IPR000719;
IPR003961;
                                                                                                                                                       IPR000494; EGFR_L_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -- MQKIGLYSLQNITRGSVRIEKNPNLCYLDTIDWSFIAESGYSNN----FIV
            Recep_L_domain; 2.
9; TYRKINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                             FN_III
                                                                                                                                         Euk_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update)
peptide receptor precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 - IVRGTQLFEDNYALAVLDNGDPLNNTT
                                                                                                                                                                                                                                                                         There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₹
                                                                                                                                                                                                                               http://www.isb-sib
                                                                                                                                                                                                                                              Usage
                                                                                                                                                                                                                                                          its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Anthomedusae;
                                                                                                                                                                                                                                              γģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.7.1.112).
                                                                                                                                                                                                                                                                         restrictions
                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                          a collaboration
                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                INSULIN
                                                                                                                                                                                                                               ch/announce,
                                                                                                                                                                                                                                                                                         outstation
                                                                                                                                                                                                                                                            Í'n
                                                                                                                                                                                                                                               commercia:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    227
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                            ō
```

```
밁
             Ş
                                  밁
                                                 Š
                                                                    밁
                                                                                  Qy
                                                                                                    В
                                                                                                                    Qy
                                                                                                                                       밁
                                                                                                                                                      Ş
                                                                                                                                                                                                                           Query Match
Best Local S
Matches 87
                                                                                                                                                                                                                                                             CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                           CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                  ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                 BINDING
                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                   Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00107; PROSITE; PS00109;
                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                           NP_BINE
                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                             Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS50011;
                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS00239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SMART;
                                  214
                                                                    157
                                                                                     146
                                                                                                     114
                241
                                                  186
                                                                                                                      98
                                                                                                                                       54
                                                                                                                                                        30
                                                                                                                                       QNCTCWHGNLVVKSTKYYDEENFKPYFPKLREITGYLLISLCTLKFFHLFPGLTVIRGGD 113
                                                                                                                                                        QGCQVVQGNL---ELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPL-QRLRIVRGTQ 85
                 GICELHCPALVTYNTDTF - - - ESMP - - -
                                  KQQNKAQCQRFCNTQC
                                           LFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDT
GQCVSKCPR-KQYLVDKFLCQESCPYWSINSTEYHHYLWQGECVTKCPVNYISNN
                                                                                    ILWKDI - - - FHKNNQLALTLIDTNRSRA-----
                                                                                                     LIL-NYALVIYYN-
                                                                   IRWKSIIKDIHQTGQYGIYL-ESNKLNCDLGCLKGHCHPAPGHDGDP--KAQYCWGPGPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SM00060;
SM00261;
SM00219;
                                                                                                                                                                        Similarity
87; Conserv
                                                                                                                                                                                                                                                                                                                                                 981
1002
1044
1050
1077
                                                                                                                                                                                                                                                                                                                                1175
                                                                                                                                                                                                                                                                              255
300
325
457
491
                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                0011; PROTEIN KINASE_DOM; 1.
Tyrosine-protein kinase; Receptor; Transmembrane; ATP-binding; Phosphorylation; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TyrKc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FU; 1.
                                                                                                                                                                                                          ξ,
                                                                                                                                                                                                                                                                                                                                                980
1001
1477
1315
1058
1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROTEIN_KINASE_ATP;
PROTEIN_KINASE_TYR;
                                                                                                                                                                                                                                                                                                                                1175
1201
                                                                                                                                                                                                                                                                                                                                                                                                                                               RECEPTOR_TYR_KIN_II;
                                                                                                                                                                                                                   255
300
325
457
491
549
549
732
791
874
                                                                                                                                                                                 17.2%;
29.5%;
                                                                                                                                                                                                           168276
                                  --GPEGCLDGSDHICCHHECLGGCSAINSTNTCHACRKYRIKST
                                                                                                                                                                         32;
                                                                                                    -----EIKEVYFPSLTAILNGGVHIGKNHRLCYVNT
                                                                                                                                                                       Score 273.5;
Pred. No. 2.4e
32; Mismatches
                                                                                                                                                                                                           ¥.
                                                                                                                                                                                                                                                                                                                                                          ATP
                                                                                                                                                                                                                           N-LINKED
                                                                                                                                                                                                                   N-LINKED
                                                                                                                                                                                                                                     N-LINKED
                                                                                                                                                                                                                                            N-LINKED
                                                                                                                                                                                                                                                    N-LINKED
                                                                                                                                                                                                                                                              N-LINKED
                                                                                                                                                                                                                                                                      N-LINKED
                                                                                                                                                                                                                                                                               N-LINKED
                                                                                                                                                                                                                                                                                      N-LINKED
                                                                                                                                                                                                                                                                                                N-LINKED
                                                                                                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                                                                                               N-LINKED
                                                                                                                                                                                                                                                                                                                          N-LINKED
                                                                                                                                                                                                                                                                                                                                 PHOSPHORYLATION (AUTO-)
                                                                                                                                                                                                                                                                                                                                                  ATP
                                                                                                                                                                                                                                                                                                                                                                            CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                            EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                     PUTATIVE
                                                                                                                                                                                                                                                                                                                                          SIMILARITY
                                                                                                                                                                                                                                                                                                                                                   (BY
                                                                                                                                                                                                          74ACDBA7C6DE1D41
                -- NPEGRYTFGASCVTACPYNYLSTD
                                                                                                                                                                                                                                                                                                                                                 SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                           SIMILARITY)
                                                                                                                                                                                                                                                                              (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       بر بر
                                                                                                                                                                                                                                                     (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                     INSULIN-LIKE PEPTIDE
                                                                                                                                                                                                                    (GLCNAC
                                                                                                                                                                                                                           (GLCNAC.
                                                                                                                                                                                                                                    (GLCNAC
                                                                                                                                                                                                                                            (GLCNAC.
                                                                                                                                                                                                                                                                       (GLCNAC
                                                                                                                                                                                                                                                                                               (GLCNAC.
                                                                                                                                                                                                                                                                                                       (GLCNAC.
                                                                                                                                                                                                                                                                                                                (GLCNAC.
                                                                                                                                                                                                                                                                                                                         (GLCNAC.
                                                                                   --CHPC----SPMCKGSRCWG----
                                                                                                                                                                                 .4e-1
                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL).
                                                                                                                                                                                          BB
                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                          :
                                                                                                                                                                         Indels
                                                                                                                                                                                                           CRC64;
                                                                                                                                                                                         Length
                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                                                                                                                               (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                              (PCTENTIAL)
                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                    POTENTIAL)
                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                (BY SIMILARITY).
                                                                                                                                                                                          1477;
                                                                                                                                                                         61;
                286
                                                                                                                                                                        Gaps
                                                                                                                     145
                                                                   213
                                                                                    185
                                                                                                     156
                                                                                                                                                                         16;
```

Search completed: April 28, 2003, 13:40:12 Job time: 14.041 secs

COLEGI AND TO ACTUAL SHIPLE

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 08
                                             1587
1450
739
7216.5
716.5
716.5
708.5
708.5
708.5
686.5
549.5
                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-821-883-23
1587
                                                                                                                                                                                                                                                                                                                                                               Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPTREMBL_21:*
1: sp_archea:*
2: sp_bacteria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        671580 seqs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     April 28, 2003, 13:37:49; Search time 19.3311 Seconds
        100.0
91.4
45.6
45.1
45.1
45.1
445.1
44.6
44.6
40.9
34.2
25.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STQVCTGTDMKLRLPASPET....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_phage: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_fungi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_vertebrate: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                 Length
      419
1259
527
149
643
653
1209
1209
1209
1209
1331
1165
1328
1433
11328
                                                                                                                                                                                                                                                                                                                                                                   DВ
        5 13
6 13
    09uK79
018735
090836
090836
09BR06
09BRV6
09EVF5
09EVF9
                                                                                                                                                                                                                                                                                                                                                                   ij
                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .....FGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (without alignments)
3080.404 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   671580
Q9uk79 homo sapien
Q18735 canis famil
Q90836 gallus gall
Q90836 oryctolagus
Q9erv6 mus musculu
Q9erv6 mus musculu
Q9epy8 mus musculu
Q9eps0 rattus norv
Q9bud7 homo sapien
Q9yh40 xiphophorus
Q9psh2 gallus gall
P79754 fugu rubrip
Q9w6f6 gallus gall
Q9w6f6 gallus gall
Q9w6f6 gallus gall
                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QSUK79
ID QSUK79
ID QSUK
AC QSUK
DT 01-M
DT 01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9UK79
Q9UK79;
01-MAY-2000 (TIEMBLIEL 13, C:
01-MAR-2001 (TIEMBLIEL 16, L:
01-UN-2002 (TIEMBLIEL 21, L:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Herstatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HER-2
```

185	185	189	191	205	206.5	218.5	228.5	228.5	232.5	244	250	252.5	255	256.5	259.5	268	271.5	271.5	273.5	287.5	289	317	331	331	341	341	377	395
•	•	11.9	•		•	•	•	14.4	٠	•	15.8		•	٠		•	•	17.1		•						•	•	
1846	1843	131	82	868	946	1245	469	410	1371	1368	1358	1369	2144	1362	1412	1749	1418	1418	89	1472	1671	1193	342	334	1717	366	1368	151
S	Ŋ	σ	6	ഗ	IJ	13	11	11	11	13	13	13	u	13				13	11	u	σ							
016131	96849	91HB6	Q9N0K4	Q9VFE2	Q9VJ04	Q9YGH8	Q63721	Q63720	09QVW4	Q8UW85	073798	Q8UW86	Q9VD94	Q9PVZ4	Q8UW84	Q8TOW6	Q8UW83	093457	088459	Q9U5A8	Q9NJV5	Q9Y1X8	Q26568	Q26567	Q26566	Q26569	Q23821	Q9BG65
016131 caenorhabd1	9		Q9n0k4 sus scrofa	Q9vfe2 drosophila	09vj04 drosophila	©9ygh8 scophthalmu		rattus		Q8uw85 paralichthy		Q8uw86 paralichthy	Q9vd94 drosophila	Q9pvz4 xenopus lae	Q8uw84 paralichthy	æ	Q8uw83 paralichthy	O93457 scophthalmu	9				schistosom	Q26567 schistosoma	Q26566 schistosoma	Q26569 schistosoma		Q9bg65 oryctolagus

## ALIGNMENTS

Created)
Last sequence update)
Last annotation update)

419 AA

Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.

		•				
 Оу	<b>X</b> H O	DR SQ	DR DR	DR RA	RRR	RT RA
1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60 	Query Match 100.0%; Score 1587; DB 4; Length 419; Best Local Similarity 100.0%; Pred. No. 2.6e-142; Matches 289; Conservative 0; Mismatches 0; Indels 0; Gaps 0	SMART; SM00261; FU; 1. SEQUENCE 419 AA; 45472 MW; FEC1BE347E2D030C CRC64;	InterPro; IPRO02174; Furin-like. Pfam; PF00757; Furin-like; 1. Pfam; PF01030; Recep L domain; 1.	Doherty J.K., Clinton G.M., Adelman J.P., Evans A.J., Henner W.D.; Submitted (SEP-2000) to the EMBL/GenBank/DDBJ databases. EMBL, AF17761; AAD56009.2; - InterPro; IPR000494; EGFR_L_domain.	Proc. Natl. Acad. Sci. U.S.A. 96:10869-10874(1999). [2] SEQUENCE FROM N.A.	MEDLINE=99415951; PubMed=10485918; Doherty J.K., Bond C., Jardim A., Adelman J.P., Clinton G.M.; "The HER-2/neu receptor tyrosine kinase gene encodes a secreted autoinhibitor.";
	••			•	•	•

Ş

61

120

```
Ş
                                                    밁
                                                                       ð
                                                                                                                                                                                                         AID
DITTO
   밁
                                                                                                     밁
                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                   Pfam: PF00069; pkinase; 1.

Pfam: pF01030; Recep_L_domain; 2.

Pfam: pF02757; YLP; 2.

Pfam: pF02757; YLP; 2.

Pfam: pF02757; YLP; 2.

Probom; pD000001; Euk_pkinase; 1.

SMART; SM00261; FU; 3.

R SMART; SM00219; TyrKC; 1.

R PROSITE; PS00118; EE_HAND; UNKNOWN_1.

PROSITE; PS00107; PROTEIN_KINASE_DOM; 1.

R PROSITE; PS00011; PROTEIN_KINASE_DOM; 1.

R PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
                                                                                                                                                       Matches
                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002048; EF-hand.
InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-1ike.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR004019; YLP_motif.
Pfam; PF00757; Furin-1ike; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  018735;
018735;
01-JAN-1998
01-JAN-1998
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Canis familiaris (Dog).
Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; (
Mammalia; Eutheria; Carnivora;
                                                                                                                                                                                                                                                                                                                                                          Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                               "cDNA cloning of erbB-2 from Submitted (OCT-1997) to the EMBL; AB008451; BAA23127.1; HSSP; P11362; IFGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yokota
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ErbB-2
   143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142
                           122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                    83
                                                                            62
                                                                                                      23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82
                                                                                                                              N
TQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQG
                                                             YVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPANASLSFLQDIQEVQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                  YVLIAHSQVRQIPLQRLRIVRGTQLFEDNYALAVLDNGDPLEGGIPAPGAAQGGLRELQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SRCWGESSEDCOSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                91.4%;
91.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                       EGFR_L_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21,05,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from canine mammary gland.";
the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation update)
                                                                                                                                                      8
                                                                                                                                                                Score 1450; DB 6
Pred. No. 1e-128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; ; Fissipedia; Canidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₹
                                                                                                                                                                               6
                                                                                                                                                       17;
                                                                                                                                                                            Length 1259;
                                                                                                                                                                                                        CRC64;
                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        289
                                                                                                                                                       0,
                                                                                                                                                      Gaps
 202
                          181
                                                  142
                                                                           121
                                                                                                     82
                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201
                                                                                                                                                      0;
```

7

RESULT Q9BG66 ID Q9 AC Q9 DT 01 DT 01

4

Q9BG66 Q9BG66; 01-JUN-2001 01-JUN-2001

(TrEMBLrel.

17, 17,

Created) .
Last sequence update)

•••.

PRELIMINARY;

PRT;

149

A

```
RESULT
Q908301
D1 031
D
                                         8
                                                                                                                                 QY
                                                                                                                                                                                       맑
                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
  日
                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1996
01-NOV-1996
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

MEDLINB-92133214; PubMed-1732751;

Flickinger T.W., Maihle N.J., Kung H.-J.;

Flickinger T.W., Maihle N.J., Kung H.-J.;

An alternatively processed mRNA from the avian companies of the receptor that can soluble, truncated form of the receptor that can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dependent transformation.";
Mol. Cell. Biol. 12:883-893(1992).
EMBL; M77637; AAA48759.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q90836;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q90836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR002174; Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGF/TGF-alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 242
  268
                                                                                               208
                                                                                                                                         182
                                                                                                                                                                                          149
                                                                                                                                                                                                                                   123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263
                                                                                                                                                                                                                                                                                    98
                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                            38
8
                                                                                                                                                                                                                                                                                                                                                                                                                           w
GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                        SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLID-TNRSRACHPCSPMCKGS
                                                                                                                                                                                                                                                                                                        VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR
                                                                                                                                                                                                                                                                                                                                                                          ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                       RLSEILNGGVKISNNPKLCNMDTVLWNDIIDTSRK-PLTVLDFASNLSSCPKCHPNCTED
                                                                                                                                                                                                                                                                                    VLIALNMVDVIPLENLQIIRGNVLYDNSFALAVLSNYH-MNKTQ------GLRELPMK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PF00757; Furin-like; 1.
PF01030; Recep_L_domain;
'; SM00261; FU; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HCWGASSGDCQSLTRTVCAGGCARCKGPQPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29
527 /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TIEMBLrel. 01, Created)
(TIEMBLrel. 01, Last sequence update)
(TIEMBLrel. 21, Last annotation update)
ha receptor precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28
527
· 58353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Chordata; Craniata; Vertebrata; Euteleostomi; Neognathae; Galliformes; Phasianidae; Phasiani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 739; DB 13;
Pred. No. 1.1e-61;
8; Mismatches 90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
EGF/TGF-ALPHA RECEPTOR.
; 764564ABCC095298 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      n block
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   289
    316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene encodes
ligand-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                              122
                                                                                                                                                                                                                                                                                                                                                                               97
                                                                                                                                                                                       207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
```

SO CE TENED TO SO CE

Indels

19;

٠.

122

88 62

194

Length

```
PERSOLFI

OCCUPANT

OCCUPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9ERV6;
Q9ERV6;
Q9ERV6;
Q1-MAR-2001 (TrEMBLrel. 1:
01-MAR-2001 (TrEMBLrel. 1:
01-JUN-2002 (TrEMBLrel. 2:
                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=C3H/101, 129/SVJ, AND 129/SVEVTAC;
STRAIN=C3H/101, 129/SVJ, AND 129/SVEVTAC;
STRAIN=C3H/101, Threadgill D.W., Eley G.D., Strunk K.
Sinclair C.S., Pearsall R.S., Green P.J., Yee D.,
Balasubramaniam S., Crossley T.O., Magnuson T.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON_TER
                                                                                                                     Submitted (JUN-2000) to the EMBL; AF275366; AAG28046.1; EMBL; AF275364; AAG28046.1; EMBL; AF275365; AAG28046.1; MGD; MGI:95294; Egfr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; C
Mammalia; Eutheria; Lagomorpha;
                                  InterPro; IPR000345; CytC_heme_bind.
InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR002174; Furin-like.
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain; 2.
                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases EMBL; AF333178; AAK14371.1; -. InterPro, IPR002174; Furin-like. Pfam; PF00757; Furin-like; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "ErbB genes and epidermal growth peri-implantation rabbit uterus a submitted (JAN-2001) to the EMBL/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tetens F., Fischer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-OCT-2001 (TrEMBLrel 18, Last Receptor tyrosine kinase ErbB2 (F
                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9986;
                                                                                                                                                                                                                                                 *Comparative
                                                                                                                                                                                                            lsoforms."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ភ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTR 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TFESMPNPEGRYTFGASCVTACPYNYLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TICAGGCARCKGQLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TVCAGGCARCKGPLPTDCCCHEQCAAGCTGPKHSDCLAGLHFNHSGICELHCPALYTYNTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NPQFCYQDTILWQEFSTRTTSWPSTRINASRARTCPPCSPACQASGCWGESPEDCQSLTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TFESMPNPEGRYTFGASCVTTCPYNYLST
                                                                                                                                                                                                                             alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SM00261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              h 45.6%;
Similarity 81.2%;
21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1
149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WOLF P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
K
                                                                                                                                                                                                                             mic sequence analy
Egfr transcripts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     149
                                                                                                                                                                                                                                                                                                                                                                                                       Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hombach-Klonisch

    Created)
    Last sequence update)
    Last annotation update)
    receptor isoform 2.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₩;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                         JOINED
                                                                                                                                                            JOINED
                                                                                                                                                                                          EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 723; DB Pred. No. 7.5e 8; Mismatches
                                                                                                                                                                                                                         analysis and ripts encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata;
                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; | Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7CB3792A54FC49BA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Leporidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          factor- (EGF-)
and blastocyst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (EGF-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vogt
                                                                                                                                                                                                                                               isolation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                             truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20;
                                                                                                                                                                                            databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11ke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s.
                                                                                                                                                                                                                                                                                                                  K.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                K.E:, Danielsen F
, Lampland A.L.,
, James C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
                                                                                                                                                                                                                                                 of.
                                                                                                                                                                                                                                                                                                                                                                                                       Murinae;
                                                                                                                                                                                                                                                 human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'n
                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                  A.J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Α:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
Q9WVF5
                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                               MEDLL...
Kawai J., Sur
Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., I
Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yer
Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T.,
Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casave
Fleischmann W., Gaasterland T., Gissi C., King B., Kochiw
                                                                                                                                                                                                                                                                                                                                                                                                                                        Reiter J.L.,
Lampland A.L.
Maihle N.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Receptor.
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN=C57BL/6J; TISSUE=LIVER;
Reiter J.L., Threadgill D.W.,
                                                                                                   STRAIN-C57BL/6J; TISSUE-LIVER: MEDLINE-21085660; PubMed-11217851; Kawai J., Shinagawa A., Shibata K.
                                                                                                                                                                                                                                                                            STRAIN-C3H/101, 129/SVJ, AND 129/SVEVTAC;
Reiter J.L., Threadgill D.W., Eley G.D., Strunk K.E.,
Sinclair C.S., Pearsall R.S., Green P.J., Yee D., Lamg
Balasubramaniam S., Crossley T.O., Magnuson T.R., Jame
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGFR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1999 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
Epidermal growth factor
                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-C3H/101, 12
                                                                                                                                                                                                                                                                                                                                                                                     Carboxy-Terminal Truncated I Submitted (JAN-1999) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9WVF5;
01-NOV-1999
                                                                                                                                                                                            Submitted
                                                                                                                                                                                                                                                               Maihle N.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9WVF5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE;
                                                                                                                                                                                                            isoforms
                                                                                                                                                                                                                                               "Comparative
                                                                                                                                                                                                                                                                                                                                                                                                                        "Alternative Transcripts from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
les 138; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VLIALNTVERIPLENLQIIRGNALYENTYALAILSN-----YGTNRTGLRELPMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KVCQGTSNRLTQLGTFEDHFLSLQRMYNNCEVVLGNLEITYVQRNYDLSFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NLQEILIGAVRESNNPILCNMDTIQWRDIVQNVFMSNMSMDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SLTEILKGGVLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSRACHPCSPMC
                                                                                                                                                                                                                             alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                          .J.;
                                                                                                                                                            FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PS00190;
                                                                                                                                                                                          (JUN-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                         genomic sequence analysis and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ā,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Balasubramaniam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOCHROME_C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71476 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               45.18;
47.38;
                                                                                                                                                                                          ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12, Creat
12, Last
21, Last
receptor
                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                   rom the Human and M
Receptors.";
e EMBL/GenBank/DDBJ
                                                                                                                                                                                          EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 716.5;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Danielsen
m S., Cross
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEF22002C84911B1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence update)
annotation update)
(Epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Crossley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.9e-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     J., Schell
/ T.O., Mag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 11;
                                                                                                                                                                                                                                             isolation
                                                                                                                                                                                                                                                                                                                                                                                                                         Mouse
                                                                                                                                                                                                                             truncated
                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---- OSHPSSCPKCDPSC
```

factor

306

Euteleostomi; Murinae; Mus

K.E., Danielsen ,
, Lampland A.L.,
, James C.D.,

A.L.,

A.J

of human a

J., Fukuda S., Yamanaka I T., Saito F. Casavant T.,

я н s к

EGFR Magnuson

a

ı,

밁 Ş 밁 δ 밁 Ş

```
RESULT

Q9EP98

AC QS

AC S

AC 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                       8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nature 409:685-690(2001).

EMBL; AF224513; AAD34149.1; -
EMBL; AF275366; AAG28047.1; JOINED.
EMBL; AF275365; AAG28047.1; JOINED.
EMBL; AF275365; AAG28047.1; JOINED.
EMBL; AF275365; BAG28047.1; JOINED.
EMBL; AK004944; BAB33688.1; -
EMBL; AK004911; BAB33681.1; -
EMBL; AK004911; BAB33662.1; -
MGD; MGI95294; Egff.
                                                                                            Mus musculus (Mouse)
Eukaryota; Metazoa; (
Mammalia; Eutheria; I
NCBI_TaxID=10090;
                                                                                                                                                                        O9EP98;
O1-MAR-2001 (TreME
O1-MAR-2001 (TreME
O1-JUN-2002 (TreME
Epidermal growth i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J., Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T., Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F., Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M., Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H., Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L., Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S., ususchizzati V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Receptor.
SEQUENCE
STRAIN-C3H/101, 129/SVJ, AND 129/SVEVTAC; Reiter J.L., Threadgill D.W., Eley G.D., Sinclair C.S., Pearsall R.S., Green P.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam;
                                                            SEQUENCE
                                                                                                                                                                                                                                                                                          Q9EP98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hayashizaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                       255
                                                                                                                                                                                                                                                                                                                                                                                                                        238
                                                                                                                                                                                                                                                                                                                                                                                                                                                               195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rPro: IPR000494: EGFR_L_doma
rPro: IPR002174; Furin-like.
PF00757; Furin-like; 1.
PF01030; Recent 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLTEILKGGVLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSRACHPCSPMC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                                                                                                                                                                                                                                                                                                                                                                                   QDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NLQEILIGAVRESNNPILCNMDTIQWRDIVQNVEMSNMSMDL----QSHPSSCPKCDPSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VLIALNTVERIPLENLQIIRGNALYENTYALAILSN-----YGTNRTGLRELPMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PNGSCWGGGEENCQKLTKIICAQQCSHRCRGRSPSDCCHNQCAAGCTGPRESDCLVCQKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 47.3 38; Conservative
                                                          FROM N.A.
                                                                                                ıs (Mouse).
Metazoa; Chordata; C
¬…+heria; Rodentia; !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           655
                                                                                                                                                                                        (TrEMBLrel. 16, Created)
(TrEMBLrel. 16, Last sequence update)
(TrEMBLrel. 21, Last annotation updat
rowth factor receptor isoform 1.
                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Recep_L_domain; FU; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ŗ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           72906 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45.1%; Score 716.5; DB 11;
47.3%; Pred. No. 1.9e-59;
tive 39; Mismatches 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EGFR_L_domain
                                                                                                              Craniata; Vertebrata; | Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6B34063B1BC928CB CRC64;
                                                                                                                                                                                                                                                                                        1210
 Strunk
, Yee D.
                                                                                                                                                                                                                                                                                      ₹
                                                                                                                                                                                                              update)
 ; 🛪
 (.E., Danie
Lampland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                   Euteleostomi;
                                                                                                               Murinae;
                   Danielsen
                                                                                                                                                                                                                                                                                                                                                                                                                      289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19;
                                                                                                                 Mus
                   A.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                   RESULT
Q9QX70
                                                                                                                                               δÃ
                                                                                                                                                                                          В
                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŖΒ
                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
 Q9QX70;
                                                                                                                 255
                                                                                                                                                       238
                                                                                                                                                                                            195
                                                                                                                                                                                                                                 179
                                                                                                                                                                                                                                                                     139
                                                                                                                                                                                                                                                                                                        123
                                                       æ
                                                                                                                                                                                                                                                                                                                                               89
                                                                                                                                                                                                                                                                                                                                                                                 63
```

```
Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000345; CytC_heme_bind.
InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR0002174; Euk_pkinase.
InterPro; IPR002174; Furin-11ke.
InterPro; IPR002174; Tyr_pkinase.
InterPro; IPR002290; Ser_thr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase; 1.
Pfam; PF00069; pkinase; 1.
Pfam; PF00069; TYRKINASE.
PFAMP; PR00109; TYRKINASE.
ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00220; S_TKC; 1.
SMART; SM00220; S_TKC; 1.
SMART; SM00210; TyrKC; 1.
PROSITE; PS00190; CYTOCHROME_C; UNKNOWN_1.
PROSITE; PS00119; PROTEIN_KINASE_DM; 1.
PROSITE; PS00119; PROTEIN_KINASE_TYR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF275364; AAG2
EMBL; AF275365; AAG2
EMBL; AF275367; AAG2
EMBL; AF275367; AAG2
HSSP; P11362; LFGK,
MGD; MGI:95294; Egfr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-C57BL/6J;
STRAIN-C57BL/6J;
STRAIN-C57BL/6J;
Reiter J.L., Threadgill D.W., Eley G.D., Strunk K.E., Danielsen
Reiter J.L., Threadgill D.W., Eley G.D., Lampland A.L.,
Schehl C., Pearsall R.S., Green P.J., Yee D., Lampland A.L.,
Schehl C., Pearsall R.S., Crossley T.O., Magnuson T.R., James C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (JUN-2000) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Comparative genomic sequence analysis and isolation of human and mouse alternative Egfr transcripts encoding truncated receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mouse alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Balasubramaniam S., Maihle N.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maihle N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           isoforms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lsotorms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Comparative genomic
                                                                                                                                                                                                                                                                                                                VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR
|||| | | ::||: || |:|: ||||:|| |
VLIALNTVERIPLENLQIIRGNALYENTYALAILSN-----YGTNRTGLRELPMR
QDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHGS
                                                                          KGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                SLTEILKGGVLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSRACHPCSPMC
                                   NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                           NLQEILIGAVRFSNNPILCNMDTIQWRDIVQNVFMSNMSMDL----QSHPSSCPKCDPSC
                                                                                                                                                                                                                                                                                                                                                                                                 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF275366;
                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1210
                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAG28045.1;
AAG28045.1;
AAG24386.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAG28045.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mic sequence analysis and i
                                                                                                                                                                                                                                                                                                                                                                                                                    45.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Crossley T.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              134840 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                   39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                    Score 716.5; DE Pred. No. 4e-59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UNKNOWN_1
                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62CD021C9DE32E18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Magnuson
                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 isolation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T.R.,
                                                                                                                                                                                                                                                                                                                                                                                                   96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C.D.,
306
                                       289
                                                                                                                                                                                                                                                                                                                                                                                                   19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .J.,
                                                                                                                                                                                                178
                                                                                                                                                                                                                                          138
                                                                                                                                                                                                                                                                             122
                                                                                                                                                                                                                                                                                                                    88
                                                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                           194
```

PRT;

1209 AA

```
B
              δ
                                         В
                                                            Š
                                                                                        밁
                                                                                                           Ω
                                                                                                                                      밁
                                                                                                                                                        δ
                                                                                                                                                                                     ₽
                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIJ
SEQUENCE FROM N.A.
STRAIN-FISHER; TISSUE-LIVER;
MEDLINE-90258888; PubMed-2342466;
MEDLINE-90258888; PubMed-2342466;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Guttridge K., Dawson T.L., E Submitted (NOV-1999) to the EMBL; M37394; AAF14008.1; -. HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammaila; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
Epidermal growth factor
                                                                                                                                                                                                                                                                                                      PROSITE; PS00107; PROTEIN_KINASE_ATP; PROSITE; PS50011; PROTEIN_KINASE_DOM; PROSITE; PS00109; PROTEIN_KINASE_TYR;
                                                                                                                                                                                                                                                                                                                                        PRINTS: PRO0109; TYRKINASE.
Proboms: PD000001; Euk_pkinase;
SMART; SM00251; EU; 3.
SMART; SM00219; TYIKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00757; Furin-like; 1. Pfam; PF00069; pkinase; 1. Pfam; PF01030; Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Earp
                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002174; Furin-like.
InterPro; IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR000719; Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-FISHER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-FISHER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               encoded
                                             198
                                                                                           139
                                                                                                                 123
258
                    241
                                                                   182
                                                                                                                                        89
                                                                                                                                                                63
                                                                                                                                                                                      29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                truncated, secreted form of the e coded by an alternatively spliced . Cell. Biol. 10:2973-2982(1990).
                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                          ·binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     H.S
                                                                                                                                                  VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR
                                                                                                                                                                                                 QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                  GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                       RCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                      SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRS-RACHPCSPMCKGS
                                                                                                                                                                                  KVCQGTSNRLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRNYDLSFLKTIQEVAGY
ATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHGS
                                                                                        NLQEILIGAVRFSNNPILCNMETIQWRDIV-QDVFLSNMSMDVQRHLTGCPKCDPSCPNG
                                                                                                                                       VLIALNTVERIPLENLQIIRGNALYENTYALAVLSN------YGTNKTGLRELPMR
                                            SCWGRGEENCQKLTKIICAQQCSRRCRGRSPSDCCHNQCAAGCTGPRESDCLVCHRFRDE
                                                                                                                                                                                                                                   137;
                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (NOV-1991) to the
                                                                                                                                                                                                                                                                                ; Receptor; Transferase; Tyrosine-protein kin
1209 AA; 134891 MW; 96FEE7F6CC1B7773 CRC64;
                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Z.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-LIVER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-LIVER;
                                                                                                                                                                                                                                              44.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13, Created)13, Last sequence (21, Last annotation r receptor.
                                                                                                                                                                                                                                   41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Earp
                                                                                                                                                                                                                                 Score 708.5;
Pred. No. 2.3e
11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ξ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             transcript
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Blasband
                                                                                                                                                                                                                                                                                                        ---
                                                                                                                                                                                                                                             3e-58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
on update)
                                                                                                                                                                                                                                                          DB 11;
                                                                                                                                                                                                                                   98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               А.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            normal rat tissue
                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euteleostomi;
; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lee
                                                                                                                                                                                                                                                                                           kinase
                    289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U
                                                                                                                                                                                                                                                          1209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ġ
                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                           62
                                                                                                                 181
                                                                                                                                       138
                                                                                                                                                                                     88
                                                                 240
                                                                                        197
                                                                                                                                                                                                                                   4
```

RESULT

ø

```
밁
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9ESE0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         regulator of EGFR.",
Submitted (MAR-2001) to the EMBL/GenI
EMBL; AF187818, AAG17037.2;
InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR002174; Furin-like,
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           O9ESEO, PRELIMINARY;
O9ESEO;
01-MAR-2001 (TrEMBLrel. 1
01-OCT-2001 (TrEMBLrel. 1
01-JUN-2002 (TrEMBLrel. 2
                                          SEQUENCE FROM N.P.
TISSUE-PLACENTA;
Strausberg R.;
                                                                                       homolog 3.
Homo sapiens (Human).
Homo sapiens (Human).
**Toota; Metazoa; Chordata;
**Toota; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Receptor.
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Métazoa; Chordata;
Mammalla: Eutheria; Rodentia;
MCBI_TaxID=10116;
 Submitted (FEB-2001) to the EMBL/Ge EMBL; BC002706; AAH02706.1; -. InterPro; IPR000494; EGFR_L_domain. InterPro; IPR002174; Furin-like.
                                                                                                                                                     01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                              Similar
                                                                                                                                                                                                  Q9BUD7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-GASTRO-DUODENAL MUCOUS;
Yu Y., Moshier J.A., Majumdar A.I
"Cloning of a novel EGFR-related
                                                                                                                                                                                         , 7auaeg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Epidermal growth
                                                                                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                                                                                         179
                                                                                                                                                                                                                                                                                                                                             139
                                                                                                                                                                                                                                                                                                                                                                  123
                                                                                                                                                                                                                                                                             238
                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                        255
                                                                                                                                                                                                                                                                                                                                                                                      . 89
                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                  29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity es 136; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
                                                                                                                                                                                                                                                      VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR
                                                                                                                                                                                                                                                                                                                                                         SLTEILKGGVLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSRACHPCSPMC
                                                                                                                                                                                                                                                                                                                                                                                                                                              QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                                                                                                                                                                                                                                                                                                  PNGSCWGGGEENCQKLTKIICAQQCSHRCRGRSPSDCCHNQCAAGCTGPQKSDCLVCQKF
                                                                                                                                                                                                                                                                                                                                                                                                                                  KVCQGTSNRLTQLGTFEDHFLSLQRMYNNCEVVLGNLEITYVQRNYDLSFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                            KGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                             NLQEILIGAVRFSNNPILCNMDTIQWRDIVQNVFMSNMSMDL----QSHPSSCPKCDPSC
                                                                                                                                                                                                                                                                                                                                                                                        FLIALNTVERIPSEDLQTIRGNALYENTYALAILSN------
                                                                                                                                             to v-erb-b2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       478
                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                  N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Rat).
                                                                                                                                             avian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53233 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16, Creat
18, Last
21, Last
receptor

    Last sequence update)
    Last annotation update)
    erythroblastic leukemia v

                                                                                                                                                                                                                                                                                                                                                                                                                                                                            39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL/GenBank/DDBJ
                                  EMBL/GenBank/DDBJ
                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                  <del>...</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 700.5; DB :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata;
Sciurognathi; Muridae
                                                                                                 Craniata; V
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A.P.N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CF873A8376C519E5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptide:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   related protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          478
                                                                                                                                                                                                  331
                                                                                                 Vertebrata;
i; Hominidae;
                                                                                                                                                                                                  ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   databases
                                                                                                                                                                                                                                                                                                                                                                                        --YGTNRTGLRELPMR
                                                                                                                                              viral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
                                                                                                            Euteleostom1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       negative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Murinae;
                                                                                                                                              oncogene
                                                                                                                                                                                                                                                        306
                                                                                                                                                                                                                                                                             289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                  178
                                                                                                                                                                                                                                                                                                    254
                                                                                                                                                                                                                                                                                                                                             194
                                                                                                                                                                                                                                                                                                                                                                                                                                 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                       62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٠,
```

Furin-like; 1.
Recep\_L\_domain;

```
DR RA DEE RA DEE RA DE R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SORR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00757; Ft Pfam; PF01030; Rt SMART; SM00261; 1 SEQUENCE 331 AJ
                                                                                                                               Pfam;
                                                                                                                                                                                                                                                                                                                     Submitted (JUL-2000) to the EMBL; U53471; AAD10500.2; HSSP; P11362; LFGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Activation of the Xmrk proto-oncogene of Xiphophorus overexpression and mutational alterations."; Oncogene 16:1681-1690(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-98241172; PubMed-9582016; Dimitrijevic N., Winkler C., Wellbrock C., Altschmied J., Schartl M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Verte
Actinopterygil; Neopterygil; Teleostei; Euta
Acanthomorpha; Acanthopterygil; Percomorpha;
Cyprinodontiformes; Poeciliidae; Xiphophorus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-MAY-1999 (TrEMBLrel 10, Created)
01-OCT-2000 (TrEMBLrel 15, Last sequence up
01-JUN-2002 (TrEMBLrel 21, Last annotation
                                                                              Pfam; PF01030; Recep_L_domain; PRINTS; PR00109; TYRKINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-RIO PURIFICATION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-RIO PURIFICATION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9YH40
                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                            Schartl M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Xiphophorus xiphidium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Receptor tyrosine kinase proto-oncogene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9YH40;
                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                           InterPro;
                                                                                                                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                 arPro; IPR000494; EGFR_Ldomain.
arPro; IPR000719; Euk_pkinase.
arPro; IPR002174; Furin-like.
arPro; IPR001899; Gram_pos_anchor.
arPro; IPR001245; Tyr_pkinase.
n; PF00757; Furin-like; 1.
                                                                                                         PF01030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GYVLVAMNEFSTLPLPNLRVVRGTQVYDGKFAIFVM-----LNYNT----NSSHALRQLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRCWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LTQLTEILSGGVYIEKNDKLCHMDTIDWRDIVRDRD---AEIVVKDNGRSCPPCHEVCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SQAVCPGTLNGLSVTGDAENQYQTLYKLYERCEVVMGNLEIVLTGHNADLSFLQWIREVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SGACVPRCPQPLVYNKLTFQLEPNPHTKYQYGGVCVASCPHNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        - RCWGPGSEDCQTLTKTICAPQCNGHCFGPNPNQCCHDECAGGCSGPQDTDCFACRHFND
                                    SM00261;
                                                        PD000001; Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                               IPR000345; CytC_heme_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 331 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                               pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36489 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43.2%;
                                                                                                                                                                                                                                                                                                                                                                      the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44;
                                                                                                                                                                                                                                                                                                                                                                      EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45B8EBEE683FE7E8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Vertebrata; Euteleostomi;
Euteleostei; Neoteleostei
rpha; Atherinomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .5e-57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gomez A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95;
                                                                                                                                                                                                                                                                                                                                                                         databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Neoteleostei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Duschl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         уď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>ن</u>
```

```
밁
                     δÃ
                                                     В
                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
Q9PSH2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DR DR DR DR DR DR DR DR SQ SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뭐
                                                                                                                       Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                   01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence up
01-JUN-2002 (TrEMBLrel. 21, Last annotation
Epidermal growth factor receptor (Fragment).
Gallus gallus (Chicken).
Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS00190; CYTOCHROME_C; UNKNOWN_1.

PROSITE; PS00343; GRAM_POS_ANCHORING; UNKNOWN_1.

PROSITE; PS00101; PROTEIN_KINASE_ATP; 1.

PROSITE; PS0011; PROTEIN_KINASE_DOM; 2.

PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.

ATP-binding; Kinase; Transferase; Tyrosine-protein kinase.

SEQUENCE 1165 AA; 129614 MW; 7F7EE38D8771A74E CRC64;
                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
MEDLINE-94020816; PubMed-8414496;
Callaghan T., Antczak M., Flickin
                                                                                                                                                                  SEQUENCE
                                                                                                                                                                               SMART;
                                                                                                                                                                                          Pfam; PF01030; Recep_L_domain; 2.
                                                                                                                                                                                                         InterPro; IPR000494; EGFR_L_doma
InterPro; IPR002174; Furin-like.
Pfam; PF00757; Furin-like; 2.
                                                                                                                                                                                                          Pfam;
                                                                                                                                                                                                                                                                                                                                                                              Gallus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9PSH2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9PSH2
                                                                                                                                                                                                                                                 Oncogene 8:2939-2948(1993).
                                                                                                                                                                                                                                                                 "A complete description of the EGF-receptor exon implication in oncogenic activation and domain ev
                                                                                                                                                                                                                                                                                            Kung H.J.;
                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                           Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
65
                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28 KYCQGTSNQMTM---LDNHYLKMKKMYSGCNYVLENLEITYTQENQDLSFLQSIQEVGGY
                                                     G
                                                                               w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                        VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSR 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
 VLIALNMVDVIPLENLQIIRGNVLYDNSFALAVLSNYH-
                                                     KVCQGTNNKLTQLGHVEDHFTSLQRMYNNCEVVLSNLEITYVEHNRDLTFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCKDTCPPPKIYDIVSHQVVDNPNIKYTFGAACVKECPSNYVVTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NLTEILSGGVKVSHNPLLCNVETINWWDIVDKTSNPTMNLIPHAFEROCOKCDPGCVNGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VLIAMNEVSTIPLVNLRLIRGQNLYEGNFTLLVMSNYQK-NPSSP--DVYQVGLKQLQLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CWAPGPGHCQKFTKLLCAEQCNRRCRGPKPIDCCNEHCAGGCTGPRATDCLACRDFNDDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                al Similarity
127; Conserv
                                                                                                                                                                  SM00261; FU;
CE 599 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SM00219;
                                                                                                                       Similarity
                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TyrKc;
                                                                                                                                                                                                                                                                                                                                                                                         Chordata; Craniata; Vertebrata; Euteleostomi; Neognathae; Galliformes; Phasianidae; Phasiani
                                                                                                                                                                  66363 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40.98;
                                                                                                                       40.0%;
                                                                                                                                                                                                                                    EGFR_L_domain.
                                                                                                                                                                                                                                                                                                       Flickinger T.,
                                                                                                           48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40;
                                                                                                        Score 635.5; DB 13
Pred. No. 8.3e-52;
8; Mismatches 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 649.5; DB 1
Pred. No. 8.7e-53;
                                                                                                                                                                  FEAB46D293D991BD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     599
                                                                                                                                                                                                                                                                                                         Raines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                     13;
                                                                                                                                                                                                                                                                 on structure: evolution.";
                                                                                                                                                                                                                                                                                                         .
.
                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 286
                                                                                                                                                                                                                                                                                                         Myers
 GLRELPMK
                                                                                                                                                                                                                                                                                                                                                                                           Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7;
                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62
                                                     64
                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                           6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
```

```
P79754
ID P7975
AC P7
Ş
                                                     밁
                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                Query Match 37.6%;
Best Local Similarity 42.3%;
Matches 119; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P79754 PRELIMINARY;
P79754;
01-MAY-1997 (TrEMBLrel. 0
01-MAY-1997 (TrEMBLrel. 0
01-JUN-2002 (TrEMBLrel. 2
                                                                                                                                                                                                                                                                                                                                                               ProDom; PD000001; Euk_pk1
SMART; SM00261; FU; 3.
SMART; SM00219; TyrKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00757; Furin-like; 1. Pfam; PF00069; pkinase; 1. Pfam; PF01030; Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
                                                                                                                                                                                                                                                      ATP-binding; Transferase.
SEQUENCE 1328 AA; 148613 MW; A333039258B647E9
                                                                                                                                                                                                                                                                                                         PROSITE; PS00107; PROTEIN_KINASE_ATP; PROSITE; PS50011; PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AF056116; AAC34391.1; HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genome Res. 9:251-258(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gellner K., Brenner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDLINE-99177347; PubMed-10077531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontidae; Takifugu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Futin-11ke.
InterPro; IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=31033;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Analysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     165
        64
                                                     26
                                                                                             VCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYV 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DHCWGAGEQNCQTLTKVICAQQCSGRCRGKVPSDCCHNQCAAGCTGPRESDCLACRKFRD 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LRSLKEISDGDIAIMKNKNLCYADTMNWRSLFATQSQKTKIIQNRNKNDCCPKCHPNCTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNY------LSTDVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PKKLDVFRTVKEISGFLLIQAWPDNATLYAFENLEIIRGRTKQHGQYSLAVVNLKIQSLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDGLCSKVCNGIGIGELKGILSINATNIDSFKNCTKINGDVSILPVAFLGDAFTKTLPLD
                                                  VCPGTQNGLSSTGSQENQYNLNKDRYKGCEIIMGNLEITQIESNWDFSFLKTIREVTGYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RLSEILNGGVKISNNPKLCNMDTVLWNDIIDTSRK-PLTVLDFASNLSSVEENGVRKCKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 148 kb of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                         cep_L_domain; 2.
Euk_pkinase; 1.
                                                                                                                                                   37.6%; Score 596.5;
42.3%; Pred. No. 1.16
tive 42; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genomic DNA around the wntl locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1328
                                                                                                                                                      1.1e-47;
ches 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----TNRSRACHPCSPMCKG
                                                                                                                                                                                                   DB 13; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tetraodontiformes;
                                                                                                                                                      Indels
                                                                                                                                                                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of Fugu
                                                                                                                                                      15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        288
                                                                                                                                                   Gaps
                                                     85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           164
                                                                                                                                                      9
```

```
RESULT 14
Q9BIH9
                       ò
                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
밁
                                                  B
                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                          Query Match
Best Local S
Matches 113
                                                                                                                                                                                                       PRINTS; PRO0109; TYRKINASE.

PRODOM; PD0000001; Euk_pkinase; 1.

SMART; SM00261; FU; 7.

SMART; SM00220; S_TKC; 1.

SMART; SM00220; TyrKC; 1.

SMART; SM00219; TYRC; 1.

PROSITE; PS00119; CYTOCHROME_C; UNKNOWN_4.

PROSITE; PS00117; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00119; PROTEIN_KINASE_TYR; 1.
                                                                                                                                                                Receptor.
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                  Pfam; PF00757; Furin-like; 1.
Pfam; PF00069; pkinase; 1.
Pfam; PF01030; Recep_L_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Cloning, expression and localisation of the Anopheles gambiae epidermal growth factor receptor."; Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pterygota; Neoptera; Anopheles.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Putative epidermal growth factor receptor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             овін9
                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AJ301655; CAC35008.1;
HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-SUA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=7165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Anopheles gambiae (African malaria mosquito)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ОВІН
                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000719;
InterPro; IPR002174;
InterPro; IPR002290;
                                                                                                                                                                                                                                                                                                                                                                                                                                  nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ycett G.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86
 61
                           65
                                                    ب
                                                                              v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGI
ISLYDLPQVILPRLQIIRGRTTFKLNKWEEAYGLFV-----
                                                    CIGTNGRMSVPANREYHYKNLRDRYTNCTYVDGNLEITWIQNITDLNFLQHIREVTGYVL
                                                                    CTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVL 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CVPQCPQTLIYNKQTFQMETNPNAKYQYGSICVSQCPTHFV 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WGPGKDQCQILTKTVCAPQCNDRCFGTSPRDCCHIECAAGCKGPLDTDCFACRLFNDSGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LTEILDGGVQIINNKYLRYGPWVYWRDII-RNNDAPIEIQFNGERGVCH---KSC-GNYC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIAMNHEQEIPLGQLRVIRGNSLYERRFALSVFLN-----YPKDG--PSGLNQLGLMN
                        IAHNQVRQVPLQRLRIVRGTQLF-----EDNYALAVLDNGDPLNNTTPVTGAS/GGLREL 119
                                                                                                          al Similarity
113; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                  IPR000494; EGFR_L_domain.
                                                                                                                                                                                                                                                                                                                                                                           IPR002290; Ser_thr_pkinase. IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                       IPR000719; Euk_pkinase.
IPR002174; Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                              IPR000345; CytC_heme_bind
                                                                                                                                                                  1433
                                                                                                          34.2%;
llarity 38.6%;
Conservative '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                 Recep_L_domain;
                                                                                                                                                                  AA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arthropoda; Tracheata; Hexapoda; Insecta; Endopterygota; Diptera; Nematocera; Culi
                                                                                                                                                                  159585 MW;
                                                                                                           45;
                                                                                                        Score 543; DB 5;
Pred. No. 1.4e-42;
5; Mismatches 109;
                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                  E3D9D88967724F07 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₹
                                                                                                                                    Length 1433;
                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Culicoidea;
 SISHMNTL 104
                                                                                                           26;
                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          191
                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
                                                                                                           <u>ئ</u>.
```

```
밁
                                                            ş
                                                                                     밁
                                                                                                            Ş
            Ş
                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                         Matches
                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                   PROSITE; PSO0107; PROTEIN_KINASE_ATP; 1.
PROSITE; PSO0107; PROTEIN_KINASE_DOM; 1.
PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
PROSITE; PS00652; TNFR_NGFR_1; UNKNOWN_1.
Kinase; Tyrosine-protein kinase.
NON_TER
1
1
SEQUENCE 1137 AA; 127927 MW: 4D616436.
                                                                                                                                                                                                                                                                          PRINTS: PRO0109; TYRKINASE.
Probom; PD000001; Euk_pkinase; 1.
SMART; SM00261; EU; 3.
SMART; SM00219; TYFKC; 1.
                                                                                                                                                                                                                                                                                                                                                              InterPro; I
Pfam; PF007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-NOV-1099 (TrEMBLrel. 21, Last annotation update)
Receptor tyrosine kinase (Fragment).
                                                                                                                                                                                                                                                                                                                           Pfam; PF01030; Pfam; PF02757;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Distribution of neuregulin-1 (nrg1) and embryonic chick hindbrain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-HINDBRAIN;
MEDLINE-99263203; PubMed-10328884;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9W6F6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9W6F6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gallus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                    [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                    (nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              165
                                                                                                                                                                                                                                                                                                                                                                                                                           interPro;
              259
                                                               200
                                                                                                                                                                                                                                                                                                                                                                                                                 nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                        nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             105 ELPALRDILGGSVGFFNNYNLCHMKSINWEEILLAPQTSMQYTFNFSSPERVCPPCHPSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             224 FYDDGVCKQECPPMQIYNPTNYFWEPNPDGKYAYGATCVRKCP-EHLLKDNGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                     62 AEQCDGRCYGPYVSDCCHRECAGGCSGPKDTDCFACMNFNDSGACVTQCPQTFVYNPTTF 121
ESMPNPEGRYTFGASCVTACPYNYL 283
                                                  AGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTF 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KGSRCWGESSEDCQSLTRTVCAGGCA--RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EVG-CWGEGAHNCQRFSKLNCSPQCSQGRCFGPKPRECCHLFCAGGCTGPTQSDCLACKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                    P11362;
                                                                                                                                                                                                                                                                                                                                                     PF00069; pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pell. Neurosci. 13:237
AF121963; AAD31764.1;
                                                                                                                                       70;
                                                                                                                                                                                                                                                                                                                                                                          IPR001245; Tyr_pkinase. IPR004019; YLP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lumsden A.;
                                                                                                                                                                                                                                                                                                                                                                                        IPR001245;
                                                                                                                                                                                                                                                                                                                                                                                                     IPR001368;
                                                                                                                                                                                                                                                                                                                                                                                                                IPR00217
                                                                                                                                                                                                                                                                                                                                                                                                                             IPR0007
                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR000494; EGFR_L_domain
                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                             ; Furin-like; l.
                                                                                                                                                                                                                                                                                                                                      Recep_L_domain; 1
                                                                                                                                                 25.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13:237-258(1999).
                                                                                                                                                                                       127927 MW; 4D616436F87DC84F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                           Euk_pkinase.
                                                                                                                                       18;
                                                                                                                                     Score 407; DB 13;
Pred. No. 8.8e-30;
L8; Mismatches 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  erb84 transcripts
                                                                                                                                                             Length 1137;
                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                      2
                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      178
                                                                                                                                      2;
```

Db 122 QLEHNHNAKYTYGAFCVKKCPHNFV 146

Search completed: April 28, 2003, 13:41:35 Job time: 23.3311 secs

GenCore version 5.1.4\_p5\_4578 Copyright (c) 1993 - 2003 Compugen Ltd.

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      on :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                 1587
716.5
716.5
716.5
716.5
716.5
716.5
700.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-821-883-23
1587
1 STQVCTGTDMKLRLPASPET......FGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               April 28, 2003, 13:39:54; Search time 8.45736 Seconds (without alignments) 1005.423 Million cell updates/sec
  1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
1100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         262574 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Issued_Patents_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cgn2_6/ptodata/1/1aa/5A_COMB.pep:*
/cgn2_6/ptodata/1/1aa/5B_COMB.pep:*
/cgn2_6/ptodata/1/1aa/6A_COMB.pep:*
/cgn2_6/ptodata/1/1aa/6B_COMB.pep:*
/cgn2_6/ptodata/1/1aa/B_COMB.pep:*
/cgn2_6/ptodata/1/1aa/PCTUS_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                             BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29422922 residues
                                           US-08-467-083-68
US-08-444-438-68
US-08-484-438-68
US-08-625-101-2
US-08-68-5458-68
US-08-68-68-68
US-08-356-786-2
US-08-356-786-2
US-08-356-786-2
US-08-484-438-1
US-08-484-438-7
US-08-484-438-7
US-08-484-438-7
US-08-484-438-2
US-09-79-08-48-2
US-09-79-08-48-2
US-09-79-08-48-2
US-09-79-08-48-2
US-09-79-08-48-2
US-09-79-08-48-2
US-09-79-08-48-2
US-09-79-08-38-9
US-08-484-38-9
US-08-484-38-9
US-08-483-38-9
US-08-483-38-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-630-155-2
US-08-422-108-1
US-08-422-734-1
US-09-146-283-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-579-823A-4
US-09-344-195-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                262574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                           Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                              .Sequence
                                                                                                                                                                                                                                                                                                                                                                                            Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
Sequence
Sequence
Sequence
Sequence
    Sequence
                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                            68, Appli
10, Appli
4, Appli
7, Appli
4, Appli
2, Appli
2, Appli
2, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                       2, Appli
1, Appli
1, Appli
4, Appli
4, Appli
4, Appli
68, Appli
68, Appli
                                                                                                                                                                                                                                                                                                Appli
Appl
                                                                                                                                                                                                                                                                                                                                              Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                            Appli
Appli
Ş
```

п o		C	;
Qy Db	Query Ma Best Loo Matches	S - 0	4444443333333333333 54444443337 544371
1 STQVC       22 STQVC	atch cal 28	SCE CHE O R P REPHYO	244.5 232.5 232.5 232.5 232.5 232.5 232.5 231.5 231.5 231.5 231.5 231.5 231.5 231.5 231.5 231.5 231.5 231.5 231.5 231.5 231.5
STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 	milarit Conse	O A RANGE TO CONTRACT OF THE COLOR OF THE CO	115.4 115.4 114.7 114.7 114.7 110.8 10.8 10.8 10.8 10.8 10.8 10.8
LPASPET        LPASPET	100. y 100. rvative	NATION:  WATION:  WATION:  WI: Doherty, Joni K FINVENTION: HER-2:  DF SEQUENCES:  DF SEQUENCES:  PESSE: DAVIS WRIG  REET: 1501 FOURTH A WY: Seattle  TYE: Washington  MTRY: U.S.A.  P: 98101  MR READABLE FORM:  DIUM TYPE: Floppy d  WPUTER: PC compatib  ERATING SYSTEM: Win  FWARE: Word  APPLICATION NUMBER:  PLICATION NUMBER:  PERENCE/DOCKET NUMB  ME: DAVISON, BAITY  JISTRATION NUMBER:  FERENCE/DOCKET NUMBER:  PERENCE/DOCKET NUMBER:  ECHARACTERISTICS:  WOTH: 419  OR **SEQ ID NO: 2:  E CHARACTERISTICS:  WOTH: 419  DE: amino acid  RANDEDNESS: single  POLOGY: unknown  E TUPPE: polypeptide  E DESCRIPTION: SEQ	97 1382 1382 1367 1367 1367 1367 1367 1368 486 383 370 383 370 370 370 370 370 370 370 370 370 37
HLDMLRH 	0%; Si 0%; P:		2 US-08
ILYQGCQV	Score 1587; Pred. No. 3. Mismatches	O: 2	2N 17529
VQGNLEI 	, 6e-	AGON AGON	783-3 -715-2 -0408-7 -559A-4 -687C-2 -819-2 -559A-5 -559A-5 -6118-18 -559A-5 -076-105 -076-105 -076-106 -076-10
TYLPTN        TYLPTN	139; 0; Inde	M. Clinton ISTS tury Square	
ASLSFLQI                 ASLSFLQI	Length 419 Indels	nton	Sequence
	9; 0; Gaps		
60 81	ps 0,		3, Appli 2, Appli 4, Appli 4, Appli 2, Appli 2, Appli 2, Appli 18, Appli 15, Appli 105, App 106, App 106, App 106, App 107, Appli 11, Ap

61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120

밁 Ş В ð 밁

밁 S

120

240 180. 180 120

240

```
US-08-422-108-J
                                                               Matches
                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/08422108 Patent No. 6015567
                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: WinPatin (Ge-
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                   FELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                                                                                                                                                                    TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: FILING DATE: 13-DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE: 14-Apr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 460 Point San Bruno Blvd
CITY: South San Francisco
STATE: California
                                                                                                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/048346 FILING DATE: 15-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
                1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
 STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                               289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94080
                                                                                                                                                           Amino Acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INVENTION:
                                                                                                                                                                                                                    910/371-7168
                                                                                                                                                                                                                                                                                                                Lee, Wendy M
                                                                                                                                                                          624 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                     415/952-9881
                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shepard,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hudziak,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genentech,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UMBER: US/08/422,108
14-Apr-1995
                                                                                                                                                                                                                                                                                                                                                19-MAY-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                      13-DEC-1994
                                                        100.0%; St
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                inch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HER2 EXTRACELLULAR DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Robert M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    H. Michael
                                                                                                                                                                                                                                                                                                                                                            07/354319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Genentech)
                                                                                                                                                                                                                                                                                                                                                                                                                                                        08/355460
                                                                                                                                                                                                                                                                                              00,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.44 Mb floppy
                                                                                                                                                                                                                                                                                   554C2D2
                                                           Score 1587; DB.3;
Pred. No. 6e-139;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              disk
                                                           Indels
                                                                                          Length 624;
                                                             0
                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141
                                                             0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                           US-08-422-734-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-422-734-1
Query Match 100.0%; Score 1587; DB Best Local Similarity 100.0%; Pred. No. 6e-139 Matches 289; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                       NEORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OPERATING SYSTEM: PC-DOS/MS-DO SOFTWARE: WinPatin (Genentech) CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                              APPLICATION NUMBER: 07/3
FILING DATE: 19-MAY-1989
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                         TELEX:
                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE: 14-App APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                      TELEFAX:
                                                                                                                                                                                       TELEPHONE:
                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: FILING DATE: 15-AP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 GYVLTAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                            TOPOLOGY:
                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER
                                                                                                                                                                                                                                    REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            South San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 , Application 6333169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94080
                                                                                            Amino Acid
                                                                                                                                                                                                                                                    Lee, Wendy M
                                                                                                                                                         910/371-7168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         460 Point
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shepard,
Ullrich,
                                                                                                          624 amino acids
                                                                                                                                                                        415/225-1994
415/952-9881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hudziak,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'Genentech,
O Point San
                                                                                                                                                                                                                                                                                 UMBER: 07/354319
19-MAY-1989
                                                                                                                                                                                                                                                                                                                                                                            13-DEC-1994
                                                                                                                                                                                                                                                                                                                             15-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                      14-Apr-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08422734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Robert M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HER2 EXTRACELLULAR DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Axe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H. Michael
                                                                                                                                                                                                                                                                                                                                               08/048346
                                                                                                                                                                                                                                                                                                                                                                                          08/355460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/422,734
                                                                                                                                                                                                                                                                                                                                                                                                                      08/422108
                                                                                                                                                                                                                            00,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Inc.
Bruno Blvd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.44 Mb floppy disk
                                                                                                                                                                                                                     554C2D1
                              4;
 0
                             Length 624;
 Indels 0;
```

밁 ş

Gaps

밁 õ 밁 ð 밁 Ş 밁 Ş

181

SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240

SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240

181

121

LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 180 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120

180

120

STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ

STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ

60 60

121 61

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                     US-09-146-283-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-146-283-4
                                                                       Query Match
Best Local (
                                                    Matches
                                                                                                                                                                                                                                                         TELEFAX: 650-324-0960
INFORMATION FOR SEQ ID NO:
SEQUENCE CARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          quence 4, Application US/09146283 tent No. 5976546
                                                                                                                                                                 MOLECULE TYPE: protein HYPOTHETICAL: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: 650-324-0880
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                TTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                   ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                 NAME: Judge, Linda R. REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                   Local Similarity
                                                                                                                                 ORGANISM: homo sapiens
INDIVIDUAL ISOLATE: GM-CSF-Her-2 fusion protein; Fig.
                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: 03-SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                    TOPOLOGY:
1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                                   ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LE OF INVENTION: IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Palo Alto
                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E: Dehlinger & Associates
350 Cambridge Ave. Suite
                                                                                                                                                                                                                                                   782 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ruegg, Curtis L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Laus, Reiner
                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                03-SEPT-1998
                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Immunostimulatory Compositions
                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/09/146,283
                                                                                                                                                                                                                                                                                                                                                               42,702
                                                    0;
                                                                                                                                                                                                                                                                                                                                                7636-0010.21
                                                                Score 1587; DB 2; Pred No. 8.1e-139;
                                                    Mismatches
                                                    0
                                                                               Length 782;
                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       289
                                                  0
                                                  Gaps
                                                  0;
```

Š 멍 Š

61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120

1 STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSELQDIQEVQ 60

STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 81

```
RESULT 5
US-08-579-823A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                               US-08-579-823A-4
                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence 4, Application US/08579823A Patent No. 6080409
   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                      TELEFAX: 650-324-0960 INFORMATION FOR SEQ ID NO:
                                                                          ORIGINAL SOURCE:
ORGANISM: homo sapiens
INDIVIDUAL ISOLATE: GM-CSF-Her-2 fusion protein; Fig.
                                                                                                                          MOLECULE TYPE: pr
                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS
                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 330 CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22
                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: U
ZIP: 94306
   Local Similarity
les 289; Conserv
                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE:
                                                                                                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                        ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3: Dehlinger & Associates
350 Cambridge Ave. Suite 250
                                                                                                                                                                                        782 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ruegg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Laus, Reiner
                                                                                                                                                                                                                                                                                                                                                                                                             PatentIn Release #1.0,
   Conservative
                                                                                                                                                          linear
                                                                                                                                                                                                                                                     650-324-0880
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                               03-DEC-1998
                                                                                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hongyu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Curtis L.
              100.0%; Score 1587; DB 3; 100.0%; Pred. No. 8.1e-139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Immunostimulatory Composition and Method
                                                                                                                                                                                                                                                                                                                                                                                US/08/579,823A
                                                                                                                                                                                                                                                                                                42,702
                                                                                                                                                                                                                                                                                    7636-0010
   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                              Version #1.25
                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        310
   0
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201
   0
```

```
밁
                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-344-195-4
                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4, Application US/09344195 Patent No. 6210662 GENERAL INFORMATION:
                                                               Matches
                                                                                                                                                                                                                                                                         TELEFAX: 650-324-0960
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
ADDRESSEE: Orambridge Ave. Suite 250
                                                                                                                                      ORGANISM: homo sapiens
INDIVIDUAL ISOLATE: GM-CSF-Her-2 fusion protein; Fig.
SEQUENCE DESCRIPTION: SEQ ID NO: 4:
                                                                                                                                                                                                   TOPOLOGY: linear MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
REGISTRATION NUMBER: 42,702
                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/344,195
FILING DATE: 24-Jun-1999
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wu, Hongyu
TITLE OF INVENTION: In
                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Laus, Reiner
Ruegg, Curtis L.
                                                                                                                                                                                     ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPNCKG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                              TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/09/146,283 FILING DATE: 03-SEPT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                          TELEPHONE: 650-324-0880
                                                                                                                                                                                                                                                              LENGTH: 782 amino acids
                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CA
                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Immunostimulatory Compositions
                                                                          Score 1587;
Pred. No. 8
                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                        7636-0010.21
                                                                          DB 4;
1.1e-139;
                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #1.25
                                                            Indels
                                                                                          782;
                                                            0;
                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141
                                                            0;
```

```
Ş
                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                          밁
                                                                                                                                                          ;
TOPOLOGY:
US-08-467-083-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-467-083-68
                                                                                                 Query Match
Best Local Similarity
Matches 289; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No. 5726023
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/467,083
FILING DATE: 06-7UN-1995
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/414,417
FILING DATE: 06-7UN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0.
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                        TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Cheeve:
                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            262 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       202 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                     NAME: Sharkey, Richard G. REGISTRATION NUMBER: 32,6 REFERENCE/DOCKET NUMBER:
             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22
                                                                                                                                                                                                                                                           TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                   LENGTH:
                                     STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seattle
                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                             3723836 SEEDANBERRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/08467083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: Seed and Berry
6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                     1255 amino acids
                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cheever,
                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mary L
                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IMMUNE REACTIVITY TO HER-2/NEU PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES HER-2/NEU ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Release #1.0,
                                                                                                                                                                                                                                                                                                                    32,629
                                                                                                   0
                                                                                                                                                                                                                                                                                                        920010.448C2
                                                                                                             Score 1587; DB 1;
Pred. No. 1.5e-138;
                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Version
                                                                                                                            Length 1255;
                                                                                                   0
                                                                                                 Gaps .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IN WHICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201
                                                                                                   0
```

밁

82

GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ

B 5

121 142

LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG

180

201

S S S

241 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289

202 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 261

LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG

```
밁
                                                                               Š
                                                                                                                    В
                                                                                                                                                   õ
                                                                                                                                                                                    g
                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-414-417B-68
                                                                                                                                                                                                                                                                                                                         US-08-414-417B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 68 Patent No.
                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (206) 682-603:
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION: TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                   181
                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                           TYPE:
                                                                                                                      82
                                                                                                                                      61 GYYLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
FILING DATE: 31-MAR
CLASSIFICATION: 424
                                                                                                                                                                                    22 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                      1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                    GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                     LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRCWGESSEDCQSLTRTYCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240
                                                 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                         289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98104-7092
                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sharkey, Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/08414417B
                                                                                                                                                                                                                                                                                                                                                                           1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3: Seed and Berry LLP
6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cheever, Martin A.
Disis, Mary L.
                                                                                                                                                                                                                                                      100.0%; Score 1587; ilarity 100.0%; Pred. No. 1. Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                     6) 62-6031
682-6031
-- NO: 68:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/414,417B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32,629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  920010.448C2
                                                                                                                                                                                                                                                                    1.5e-138;
                                                                                                                                                                                                                                                                                         Length 1255;
                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                      Gaps
                                                                                                                    141
                                                                                                                                                                                      81
                   240
                                                   201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     261
                                                                                                                                                                                                                                                         0;
```

밁

22

Ş

61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120

```
Ş
                                                                                                                                                                                                                               US-08-484-438-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-484-438-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 5811098
Patent No. 5811098
                                                                                          Matches 289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO: 8:
                                                                                                                                                                                                                                                           TOPOLOGY: un
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: HER4 HUMAN RECEPTOR TYROSINE KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPOTER: IBM re COMPOTER: IBM re COMPOTER: PC-DOS/MS-DOS OPERATING SYSTEM: PC-DOS/MS-DOS OPERATING PATENTIAL PATENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    262 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS: un
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: FILING DATE: 14-OC APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/484,438 FILING DATE: 07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 10-NOV-1993
1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION
                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5811098 5780031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Misrock,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New York
Y: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/08484438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shoyab, Mohammed
Siegall, Clay B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (212)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plowman, Gregory D.
Culouscou, Jean-Michel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hellstr m,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hellstr m, Ingegerd
Hellstr m, Karl E.
                                                                                              Conservative
                                                                                                                                                                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-NOV-1992
                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PENNIE
                                                                                                                                                                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    869-8864/9741
                                                                                                                          100.0%; Score 1587; DB 2; 100.0%; Pred. No. 1.5e-138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US 07/981,165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US 08/150,704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08/323,442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18,872
                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5624-230
                                                                                              Mismatches
                                                                                              0
                                                                                                                                                             Length 1255;
                                                                                              Indels
                                                                                              0
                                                                                          Gaps
                                                                                              0
```

```
á
                                                          밁
                                                                                Ş
                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
US-08-486-348A-68
; Sequence 68, App
  밁
                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                  US-08-486-348A-68
                                                                                                                                                                                        Best
                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No. 5846538 GENERAL INFORMATION:
                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                    TELEPHONE: (206) 622-49
TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release CURRENT APPLICATION DATA:
APPLICATION UMBER: US/01
FILING DATE: 07-JUN-1995
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION: TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Sharkey, Richard G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
    142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                          82
                                                                                   13
                                                                                                                 22
                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                                                         NAME: Sharkey, Richard REGISTRATION NUMBER: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE
                                                                                                            GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                       GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SRCWGESSEDCQSLTRTYCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SRCWGESSEDCQSLTRTYCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                           289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OF SEQUENCES:
                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3, Application US/08486348A
5846538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Seattle
                                                                                                                                                                                                                                                          amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: Seed and Berry LLP 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cheever, Man
Disis, Mary
                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PatentIn Release #1.0, Version
                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                           US/08/486,348A
                                                                                                                                                                                                                                                                                                     68:
                                                                                                                                                                                                                                                                                                                                                                                      G
                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                           920010.448C6
                                                                                                                                                                       Score 1587; DB 2;
Pred. No. 1.5e-138;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                701 Fifth Avenue
                                                                                                                                                                                                 Length 1255;
                                                                                                                                                                        Indels
                                                                                                                                                                        0
                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                 81
                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141
                                                                                                                                                                        0;
```

```
.B
                                                      Qy
                                                                                        밁
                                                                                                                    Ş
                                                                                                                                                     В
                                                                                                                                                                                  Ş
                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                               US-08-625-101-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-625-101-2
                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (206) 682-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: D1818, MA
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn Rel-
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                          142 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           202
                                                                                                                                                       82 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                       61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 92,629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: FILING DATE: 01-APPLICATION: 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                    22 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLŞFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Sharkey, Richard
                                                                                                                                                                                                                                    1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                          LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                              SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                          SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              289;
                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , Application 5869445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RY: USA
98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seattle
                                                                                                                                                                                                                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disis, Mary L.

VENTION: COMPOUNDS FOR ELICITING OR ENHANCING IMMUNE
VENTION: REACTIVITY TO HER-2/neu PROTEIN FOR PREVENT:
VENTION: OR TREATMENT OF MALIGNANCIES IN WHICH THE HI
                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cheever,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (206)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-APR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                     682-6031
                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OR TREATMENT OF MALIGNATION ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08625101
                                                                                                                                                                                                                                                                                                                                                                                                           acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/625,101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G
                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   920010.448C7
                                                                                                                                                                                                                                                                                               Score 1587; DB 2;
Pred. No. 1.5e-138;
                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROTEIN FOR PREVENTION NCIES IN WHICH THE HER-2/neu
                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                             Length 1255;
                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            289
                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                  Gaps
                                                           240
                                                                                          201
                                                                                                                        180
                                                                                                                                                       141
                                                                                                                                                                                      120
                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                              261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           261
                                                                                                                                                                                                                                                                                  0
```

```
RESULT 13
US-08-356-786-2
: Sequence 2, Application US/08356786
                                                                                                                 밁
                                                                                                                                           5
                                                                                                                                                                             В
                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 12
US-08-468-545B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-468-545B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No. 5876712
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 68,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: (206) 682-6031 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32.629
REFERENCE/DOCKET NUMBER: 92
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Cheever, Marti
APPLICANT: Disis, Mary L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                               181
                                                                                                                                                                                                                                              142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 262
                                                                                                               262
                                                                                                                                                                               202
                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                               22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 06-JUN-1995
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Seattle
STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/08/468,545B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                              1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                            LRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                             GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GICELHCPALVTYNTDTFESMPNPEGRYTTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                             SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                           LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 180
                                                                                                               GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                              SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHS 240
                                                                                                                                                                                                                                                                                                            GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                             STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 81
                                                                                                                                                                                                                                                                                                                                                                                                                                             289; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8, Application US/08468545B 5876712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: Seed and Berry LLP 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IMMUNE REACTIVITY TO HER-2/neu. PROTEIN
FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HER-2/neu ONCOGENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68:
                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              920010.448C5
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1587; DB 2;
Pred. No. 1.5e-138;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                               310
                                                                                                                                            289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 310
                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                              201
                                                                                                                                                                                                                                                                                                            141
                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
US-08-356-786-2
                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Patent No. 5877305 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (617) 248-71 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: CR
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 06-FEB-1992 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
ADDRESSEE: Edmund R. Pitcher,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Huston, APPLICANT: Oppermar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Houston, L. APPLICANT: Ring, David
                 241 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                             181
262
                                                                      202 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                142 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                 121 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                         61 GYYLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                        82 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 141
                                                                                                                                                                                                                                                                                                  22 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Pitcher, Edmund REGISTRATION NUMBER: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/356,786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 07/831,967
                                                                                                                                                                                                                                                                                                                    1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240
GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                          al Similarity
289; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 I: 1255 amino acids amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Exchange Place,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ring, David B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oppermann,
                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 1587; llarity 100.0%; Pred. No. 1. Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /) 248-7100
248-7100
NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Biosynthetic Binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hermann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27,829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRP-053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  er, Testa, Hurwitz,
State Street
                                                                                                                                                                                                                                                                                                                                                                                          1.5e-138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        & Thibeault
                                                                                                                                                                                                                                                                                                                                                                                                             Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cancer
                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                        261
                                                                                                                                                  201
```

US-08-466-680B-68 US-08-466-680B-68 ; Sequence 68, Application US/08466680B ; Patent No. 6075122

밁 δõ DЬ Š В Š 밁 Ş B δÃ

Cheever,

```
á
                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                밁
                                                                                                                                                  US-08-336-708A-9
                                                                                                                                                                  RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-466-680B-68
                                                                                                                     Sequence 9, Application US/08336708A Patent No. 5521295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (206) 682-6031 INFORMATION FOR SEQ ID NO:
    NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                       142
                                                                                                                                                                                                                262
                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                          202
                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                                61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                  GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240
                                                                                                                                                                                                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                GYVLIAHNOVROVPLORLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                            STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sharkey,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Seed and Berry LLP 6300 Columbia Center,
                                                          Chang, Ming-Sh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cheever, Martin A. Disis, Mary L.
                                                                       Thomason, Arlen R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (206)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/466,680B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ດ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        920010.448C4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1587; DB 3; Pred. No. 1.5e-138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                              310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                141
                                                                                                                                                                                                                                                                                                                                                                                                                                                            81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
US-08-336-708A-9
                                                                                                                                                                                                                                                                                                                                                                             Matches 134;
                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Recurrent Application Data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 10% CITY: Thousand Oaks
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: 1
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION
                     242 ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                         199 CWGAGEENCQKLTKIICAQQCSGRCRGKSPSDCCHNQCAAGCTGPRESDCLVCRKFRDEA 258
                                                                                                                                                139 NLQEILHGAVRFSNNPALCNVESIQWRDIVSSDFLSNMSMDFQNHLGSCQKCDPSCPNGS 198
259 TCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHGS
                                                                                                          183 CWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG 241
                                                                                                                                                                                   123 SLTEILKGGVLIQRNPOLCYODTILWKDIFHKNNOLALTLIDTNRSRACHPCSPMCKGSR 182
                                                                                                                                                                                                                           89 VLIALNTVERIPLENLQIIRGNMYYENSYALAVLSNYD------
                                                                                                                                                                                                                                                              63 VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 122
                                                                                                                                                                                                                                                                                                    29 KVCQGTSNKLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRNYDLSFLKTIQEVAGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91320-1789
                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oleski,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   644 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1840 Dehavilland Drive
                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S: single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nancy
                                                                                                                                                                                                                                                                                                                                                                                               45.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/08/336,708A
                                                                                                                                                                                                                                                                                                                                                                               44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A-241A
                                                                                                                                                                                                                                                                                                                                                                                               Score 716.5; DB 1; Pred. No. 2.9e-58;
                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                             -ANKTGLKELPMR
                                                                                                                                                                                                                                                                                                                                                                                                                    644;
                                                                                                                                                                                                                                                                                                                                                                               11;
                                                                                                                                                                                                                                                                                                                                                                             Gaps.
                                                                                                                                                                                                                             138
                                                                                                                                                                                                                                                                                                      88
```

Search completed: April 28, Job time: 15.4574 secs 2003, 13:43:18 В Ş 망 Ş ₽ δÃ 망 Ş 밁 δÃ

Copyright

GenCore version 5.1.4\_p5\_4578 (c) 1993 - 2003 Compugen Ltd.

```
Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                  Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            on:
                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Published_Applications_AA:*

l: /cgn2_6/ptodata/1/pubpaa/U
2: /cgn2_6/ptodata/1/pubpaa/U
3: /cgn2_6/ptodata/1/pubpaa/U
4: /cgn2_6/ptodata/1/pubpaa/U
4: /cgn2_6/ptodata/1/pubpaa/U
5: /cgn2_6/ptodata/1/pubpaa/U
6: /cgn2_6/ptodata/1/pubpaa/U
6: /cgn2_6/ptodata/1/pubpaa/U
9: /cgn2_6/ptodata/1/pubpaa/U
10: /cgn2_6/ptodata/1/pubpaa/U
11: /cgn2_6/ptodata/1/pubpaa/U
11: /cgn2_6/ptodata/1/pubpaa/U
13: /cgn2_6/ptodata/1/pubpaa/U
14: /cgn2_6/ptodata/1/pubpaa/U
15: /cgn2_6/ptodata/1/pubpaa/U
16: /cgn2_6/ptodata/1/pubpaa/U
17: /cgn2_6/ptodata/1/pubpaa/U
18: /cgn2_6/ptodata/1/pubpaa/U
19: /cgn2_6/ptodata/1/pubpaa/U
10: /cgn2_6/ptodata/1/pubpaa/U
11: /cgn2_6/ptodata/1/pubpaa/U
12: /cgn2_6/ptodata/1/pubpaa/U
13: /cgn2_6/ptodata/1/pubpaa/U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-821-883-23
1587
1 STQVCTGTDMWFDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                   Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      April 28, 2003, 13:40:24; Search time 10.6321 Seconds (without alignments) 2178.074 Million cell updates/sec
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301932 seqs, 80129803 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STQVCTGTDMKLRLPASPET.....FGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_RUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                    Length
690
697
712
                                                                                                                                                                                                                                                                                                                                    BG
 10 US-09-821-883-3

US-09-954-356-3

US-09-984-356-3

US-09-884-356-7

US-09-884-356-7

US-09-884-356-1

US-09-884-356-1

US-09-884-356-1

US-09-984-356-1

US-09-984-356-1

US-09-981-115-3

US-09-811-115-3

US-09-811-115-3

US-09-811-115-3

US-09-814-356-8

US-09-814-356-8
                                                                                                                                                                                                                                                                                                                                    Ħ
                                                                                                                                                                                                                                                               US-09-821-883-23
US-09-821-883-5
US-09-821-883-1
                                                                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301932
                                                                                                                                                                                                                                                                                                                                   Description
                                                            Sequence 7
Sequence 6
Sequence 2
Sequence 1
Sequence 2
Sequence 6
Sequence 6
            Sequence
Sequence
                                                                                                                                                                                                Sequence 3
Sequence
                                             Sequence
                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                  Sequence
          8, Appl
118,
                                                                                                                                                                                                                  ω
                                                                                 σ
                                                                                                                                                                             3, Appli
2, Appli
4, Appli
                                                                                                                                                                                                                              23, Appli
5, Appli
1, Appli
3, Appli
1, Appli
                                             9, Appl
                                                                            Appli
Appli
Appli
Appli
Appli
Appli
```

45	44	43	42	41	0	39	38	37	36	35	34	33	32	3	30	29	28	27	26	25	24	23	22	21	20
114	114.5	115.5	116	116.5	117	132	132	166.5	166.5	171.5	171.5	185	185	186	186	232.5	249	686	700.5	713.5	716.5	716.5	716.5	878	1352.5
7.2	7.2	7.3	7.3	7.3	7.4	8.3	8.3	10.5	10.5	10.8	10.8	11.7	11.7	11.7	11.7	14.7	15.7	43.2	44.1	45.0	45.1	45.1	45.1	55.3	85.2
840	1281	1875	22	68	2290	381	381	370	370	383	383	1724	1724	366	366	1367	120	1342	478	615	1308	1210	657	191	1256
9	9	φ	10	10	9	10	10	10	10	10	10	10	10	10	10	9	9	9	10	10	10	10	9	9	9
US-10-123-155-227	US-10-123-155-509	US-10-123-155-359	US-09-466-320-19	US-09-466-320-11	US-10-123-155-323	US-09-844-353A-106	US-09-205-658-106	US-09-844-353A-104	US-09-205-658-104	US-09-844-353A-105	US-09-205-658-105	US-09-844-353A-12	US-09-205-658-12	US-09-844-353A-103	US-09-205-658-103	US-09-870-759-120	US-10-172-620-17	US-10-172-620-16	US-09-867-521-2	US-09-940-101-4	US-09-940-101-2	US-09-725-433-2	US-10-172-620-18	US-09-441-411-9	US-09-854-356-14
Sequence 227, App		359	Sequence 19, Appl	Sequence 11, Appl	Sequence 323, App	Sequence 106; App	Sequence 106, App	Sequence 104, App	Sequence 104, App	Sequence 105, App	10	12	Sequence 12, Appl	10	Sequence 103, App	_	Sequence 17, Appl				Ņ	Sequence 2, Appl1	Sequence 18, Appl	Sequence 9, Appl1	Sequence 14, Appl

## ALIGNMENTS

US-09-821-883-23

Sequence 23, Application US/09821883 Patent No. US20020061310A1

GENERAL INFORMATION:
APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7535-0022.30

Dendritic

```
Ş
                                                  В
                                                                             Ş
                                                                                                          В
                                                                                                                               Ş
                                                                                                                                                                DЬ
                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                 Query Match
                         181
181
                                                     121
                                                                                121
                                                                                                            61
                                                                                                                         61 GYYLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                  / Match 100.0%;
Local Similarity 100.0%;
hes 289; Conservative 0
                                                                                                                                                              LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 180
           SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSUCLACLHFNHS 240
                                                                                                         GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHS
                                                   LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                       0:
                                                                                                                                                                                                                    Score 1587; DB 10;
Pred. No. 6.2e-120;
D; Mismatches 0;
                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                               Length 289;
                                                                                                                                                                                                                       0
                                                                                                                                                                                                                     Gaps
                                                     180
240
                                                                                                                                                                                                                       .
0
```

ORGANISM: Homo sapiens US-09-821-883-23

SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 23 LENGTH: 289 TYPE: PRT

CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30

```
Ş
                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                              US-09-821-883-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-821-883-5
                                                                                                                                                                                               Sequence 1, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                  GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 5, Application USPAtent No. US20020061310A1
            CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
                                                                                                                                    APPLICANT: Laus,
APPLICANT: Vidoo
APPLICANT: Grade
                                                                                     APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions
TITLE OF INVENTION: Cell-Based I
FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/821,8
CURRENT EILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Laus, Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: HER300*-rGM-CSF construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                                                                                                                                                                                                                                                          281
                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                     221
                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                              161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                       GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                              LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                  SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                      GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                  SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                              LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                  Reiner
Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/09821883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      us/09/821,883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                     Immunotherapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1587; DB 10; Pred. No. 1.1e-119;
                                                                                                                    and Methods for Dendritic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 479;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                  280
                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                            220
                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                   밁
                                                                                   Qy
                                                                                                                                              δÃ
맑
                      ρ
                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                       TYPE: PRT
                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                          121
                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161
61
                                                                                     61
                                                                                                                   4
```

```
; OTHER INFORMATION: HER500* construct US-09-821-883-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
US-09-821-883-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; OTHER INFORMATION: HER500 construct US-09-821-883-1
                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 3
LENGTH: 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Laus, Re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 30 SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        221 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 41 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                              1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 180
                                                                                                   GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                            GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                           STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                        100.0%; ilarity 100.0%; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                          <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                        Score 1587; DB 10;
Pred. No. 1.3e-119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1587; DB 10;
Pred. No. 1.3e-119;
                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dendritic
                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                               Length 564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ,
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     555;
                                                                                                                                                                                                                                          <u>,,</u>
                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                              160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
;
```

```
; LENGTH: 645
; TYPE: PRT
; ORGANISM: HOMO S
US-09-921-161-1
                                                                                                                                                                                                                                                                                                       US-09-854-356-3
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-921-161-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
           APPLICANT: SmithKline Beecham Biologicals S. A.
TITLE OF INVENTION: HER-2/neu Fusion Proteins
FILE REFERENCE: 014058-009810PC
CURRENT APPLICATION NUMBER: US/09/854,356
CURRENT FILING DATE: 2001-05-09
PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR APPLICATION NUMBER: US 60/117,976
PRIOR FILING DATE: 1909-01-29
PRIOR FILING DATE: 1999-01-29
                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Cheever, Martin A.
APPLICANT: Gheysen, Dirk
APPLICANT: Corixa Corporation
APPLICANT: SmithKline Beecham
                                                                                                                                                                                                                                                              Sequence 3, Application US/09854356 Patent No. US20020177567A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US Patent No. US20020090662A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: ANALYTICAL METHOD FILE REFERENCE: GENENT.066A CURRENT APPLICATION NUMBER: US/09/921,161 CURRENT FILING DATE: 2001-08-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/225,433 PRIOR FILING DATE: 2000-08-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Ralph,
                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                              202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  289;
SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/09921161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1587;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 10;
L.6e-119;
                                                                                                                                                                 >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 645;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
; FEATURE: ; OTHER INFORMATION: extracellular domain (ECD) of human HER-2/neu US-09-854-356-3
                 Š
                                                 В
                                                                               õ
                                                                                                                   В
                                                                                                                                               δÃ
                                                                                                                                                                                                                                                        ; OTHER INFORMATION: HER500-hGM-CSF construct US-09-821-883-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-821-883-2
                                                                                                                                                                                       Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 289; Conserv
                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Ver. SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF GEO TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Compositions and Methods for Dendritic TITLE OF INVENTION: Cell-Based Immunotherapy FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Laus, APPLICANT: Vidov APPLICANT: Grade
                                                                                                                                                                                                                                                                                                     TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Homo
                                                                                                                                                                                                                                                                                            FEATURE:
                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCCHEQCAAGCTGPKHSDCLACLHFNHS 240
                 121
                                                   101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG 180
                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                     41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 81
                                                                                                                                                                                                       Local
                                                                   GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                   GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                   STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLGDIQEVQ 100
                                                                                                                                   STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          653
                                                                                                                                                                                                                                                                                                                                                 690
                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Vidovic, Damir
Graddis, Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 1587; DB 9; llarity 100.0%; Pred. No. 1.6e-119; Conservative 0; Mismatches 0;
                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Reiner
                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                       0;
                                                                                                                                                                                     Score 1587; DB 10;
Pred. No. 1.7e-119;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                       Indels
                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        653;
                                                                                                                                                                                                                        690;
                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201
                   180
                                                   160
                                                                                                                                                     60
```

. 0

```
APPLICANT: Vidović, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION UNMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US/09/821,883
I PRIOR FILING DATE: 2000-03-30
SPIOR FILING DATE: 2000-03-30
VINDBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
LENGTH: 697
TOURS: DEM
                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                .B
                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                US-09-854-356-7
                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : OTHER INFORMATION: HER500*-rGM-CSF construct US-09-821-883-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 8
US-09-821-883-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
            GENERAL INFORMATION:
APPLICANT: Cheever, Martin A.
APPLICANT: Gheysen, Dirk
APPLICANT: Corixa Corporation
APPLICANT: SmithKline Beecham Biologicals S.
TITLE OF INVENTION: HER-2/neu Fusion Proteins
FILE REFERENCE: 014058-009810PC
                                                                                                                                                         Sequence 7, Application.US/09854356 Patent No. US20020177567A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 100.0%;
Best Local Similarity 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4, Application US/09821883
Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Laus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                  241 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                            221
                                                                                                                                                                                                                                                                                                                                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          281
                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61. GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                               GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                              SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                      LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 100
                                                                                                                                                                                                                                                                                                                                                          SRCWGESSEDCOSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
APPLICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Reiner
NUMBER: US/09/854,356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1587; DB 10; Pred. No. 1.7e-119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      697;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                      220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
OTHER INFORMATION: Description of Artificial Sequence:fusion; OTHER INFORMATION: of ECD and PD of human HER-2/neu US-09-854-356-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-854-356-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-854-356-7
Query Match
Best Local Sir
Matches 289;
                                                                                                                                                             SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 6
LENGTH: 919
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 6, Application US/09854356 Patent No. US20020177567Al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 7
                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Gheysen, Dirk
APPLICANT: Corixa Corporation
APPLICANT: SmithKline Beecham Biologicals S.
APPLICANT: SmithKline Beecham Biologicals S.
TITLE OF INVENTION: HER-2/neu Fusion Proteins
FILE REFERENCE: 014058-009810PC
CURRENT EPPLICATION NUMBER: US/09/854,356
CURRENT FILING DATE: 2001-05-09
                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR FILING DATE: 2000-01-28
PRIOR APPLICATION NUMBER: US 60/117,976
PRIOR FILING DATE: 1999-01-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT FILING DATE: 2001-05-09
PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR FILING DATE: 2000-01-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Cheever, Martin A. APPLICANT: Gheysen, Dirk
                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 26
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US PRIOR FILING DATE: 1999-01-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: Description of Artificial Sequence:fusion protein OTHER INFORMATION: of ECD and delta PD of human HER-2/neu
                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        142 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           262 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60/117,976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
Score 1587; DB 9;
Pred. No. 2.4e-119;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1587; DB 9; Pred. No. 1.8e-119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 712;
                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 289
                                           919;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

Similarity

Conservative

0

Gaps

>

.

```
; LENGTH: 1255
; TYPE: PRT
; ORGANISM: HOMO S
US-09-769-508-2
                                 RESULT 12
US-09-854-356-1
                                                                                                      밁
                                                                                                                                Ş
                                                                                                                                                                       맑
                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
US-09-769-508-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
   Sequence 1, Application US/09854356 Patent No. US20020177567A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/09769508 Patent No. US20020155527A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/769,508
CURRENT FILING DATE: 2001-01-26
NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: CHAO, LORRINE A.
APPLICANT: BLUFORD, PETER
TITLE OF INVENTION: C-ERBB-2 EXTERNAL DOMAIN: GP75
FILE REFERENCE: BEBIO-111-C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: MONAHAN, JOHN J.
APPLICANT: LANGTON, BEATRICE CLAUDIA
APPLICANT: HANCOCK, MIRIAM E.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: STUART, SUSAN G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               142
                                                                                                       262
                                                                                                                                                                         202
                                                                                                                                                                                                        181
                                                                                                                                                                                                                                          142
                                                                                                                                                                                                                                                      121 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                     241 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                            22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22
                                                                                                                                                                                                                                                                                                                                                                                                             _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                    GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                         GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                                                                                                        STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                      GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                        STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSELQDIQEVQ
                                                                                                                                                                     SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                        LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                               289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1587; DB 9; Pred. No. 3.4e-119;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                      310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        289
                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                      141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                       261
                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                       RESULT 13
US-09-930-125-2
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                      Вр
                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-854-356-1
                                                                 GENERAL INFORMATION:
APPLICANT: Hand-Zimmu
APPLICANT: Cheever,
APPLICANT: FOY, Tere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 289
                                                                                                                                    Sequence 2, Application US/09930125 Publication No. US20020193329A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Cheever, Martin A.
APPLICANT: Gheysen, Dirk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Gheysen, D1rk
APPLICANT: Corixa Corporation
APPLICANT: Smithkline Beecham Biologicals S.
APPLICANT: Smithkline Beecham Brologicals S.
TITLE OF INVENTION: HER-2/neu Fusion Proteins
TILE REFERENCE: 014058-009810PC
CURRENT ENDICATION NUMBER: US09/854,356
CURRENT FILING DATE: 2001-05-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: US 60/117,976
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: US 09/493,480 PRIOR FILING DATE: 2000-01-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn
                                    APPLICANT:
                                                    APPLICANT:
                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: DOMAIN
LOCATION: (990)..(1048)
OTHER INFORMATION: fragment of the phosphorylation
OTHER INFORMATION: portion (delta PD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: DOMAIN
LOCATION: (990)...(1255)
OTHER INFORMATION: phosphorylation domain (PD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: DOMAIN
LOCATION: (676)..(1255)
OTHER INFORMATION: intracellular domain (ICD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: DOMAIN
LOCATION: (1)..(653)
OTHER INFORMATION: extracellular domain (ECD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENGTH:
                                                                                                                                                                                                                                                                                                                                                                        142
                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                       202
                                                                                                                                                                                                                                        262
                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Sin
hes 289;
                                                                                                                                                                                                                                                                                                                                                                                                                                             82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22
                                                                                                                                                                                                                                    GICELHCPALVTYNTDTFESMPNPEGRYTEGASCVTACPYNYLSTDVGS 289
                                                                                                                                                                                                                                                                                                                                                                                                                                      GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                       SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                          LRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                        LRSLTEILKGGVIJQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                      Hand-Zimmerman,
McNeill,
Vedvick,
                             Foy, Teresa M.
Lodes, Michael J.
Kalos, Michael D.
                                                                                  Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ver.
 Patricia
Thomas S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 1587; DB 9; 100.0%; Pred. No. 3.4e-119; tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HER-2/neu
                                                                                                      Susan
                   D
```

domain,

preferred

Length

0

Gaps.

0

81

```
á
                                                  В
                                                                               á
                                                                                                               밁
                                                                                                                                              Ş
                                                                                                                                                                                                                                              ; TYPE: PRT; ORGANISM: Homo sapiens US-09-441-411-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Homo sapien US-09-930-125-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-441-411-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 6, Application US/09441411 Publication No. US20030008342A1
                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                  SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 25
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
                                                                                                                                                                                   Matches
                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Scholler, Nathalie B.
APPLICANT: Disis, Mary L.
APPLICANT: Hellstrom, Ingegerd
APPLICANT: Hellstrom, Karl Erik
TITLE OF INVENTION: SURFACE RECEPTOR ANTIGEN VACCINES
FILE REFERENCE: 730033.409
                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/441,411
CURRENT FILING DATE: 1999-11-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/930,125
CURRENT FILING DATE: 2001-08-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: COMPOSITIONS AND METHDOS FOR THE THER. TITLE OF INVENTION: OF HER-2/NEU-ASSOCIATED MALIGNANCIES FILE REFERENCE: 210121.544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
                                                                                                                                                                                                                                                                                                 ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENGTH:
                                                                                                                                                                       Mar
Local 5.
289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142
121 LRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                               82 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                             22 STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                              1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       289;
                                                                                                                                                                                                                                                                                                 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1255
                                                                                                                                                                                                Similarity
                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                 Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                              1999-11-16
                                                                                                                                                                              100.0%; Score 1587;
100.0%; Pred. No. 3.4
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1587; DB 9;
Pred. No. 3.4e-119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                               DB 9;
3.4e-119;
                                                                                                                                                                                                              Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1255;
                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THERAPY AND DIAGNOSIS
                                                                                                                                                                               0;
                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                               81
                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
밁
                              Š
                                                                       밁
                                                                                                        δ
                                                                                                                                               В
                                                                                                                                                                                  8
                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-811-123-9
                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 9
                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 9, Application US/09811123 Patent No. US20020001587A1
                                                                                                                                                                                                                                                                                                                                                                       Matches 289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/811,123
CURRENT FILING DATE: 2001-03-16
PRIOR APPLICATION NUMBER: 60/238,327
PRIOR FILING DATE: 2000-10-05
PRIOR APPLICATION NUMBER: 09/602,530
PRIOR FILING DATE: 2000-06-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: GENENT.073A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Mark Sliwkowski
TITLE OF INVENTION: METHODS OF TREATMENT USING ANTI-ErbB
TITLE OF INVENTION: ANTIBODY-MAYTANSINOID CONJUGATES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENERAL INFORMATION:
APPLICANT: Sharon Erickson
APPLICANT: Ralph Schwall
APPLICANT: Mark Sliwkowsk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 1255
262
                   241 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                               142 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  142
                                                                                                                                                                                                                        82
                                                                                                                                                                                                                                          61 GYYLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 120
                                                                                                                                                                                                                                                                                                22
                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                               1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                  LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                       SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                        GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                    100.0%;
ilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                     Score 1587; DB 10;
Pred. No. 3.4e-119;
                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                          Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    289
                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                               201
                                                                                                                                                                                     180
                                                                                                                                                                                                                        141
                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201
                                                                         261
                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                       0
```

Search completed: April 28, 2003, 13:44:07 Job time: 14.6321 secs

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-821-883-2
690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OLIGO
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        283224 seqs, 96134422 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         April 28, 2003, 13:43:24; Search time 22 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42.3
18.4
9.7
7.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MRAAPLLLARAASLSLGFLF......EPVQEGAPPPPAAAHHHHHH 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
  DB
                                                                                            JH0466

RA4936

ROBOGM

A42032

A32032

A53183

TVCHUE

146269

S46534

A55183

TVCHUE

146269

S46534

S46534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FQHUGM
I48161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (without alignments)
3015.125 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              283224
                   granulocyte-macrop
ubiquinol-cytcchro
Ig heavy chain V r
probable modD prot
conserved hypothet
phenylalanyl-tRNA
HlyD family secret
molybdopterin co-f
molybdopterin co-f
molybdopterin ro-f
molybdopterin co-f
a phenylalanine-tRNA
hypothetical prote
probable diapophyt
sensor kinase cita
signal-transducing
                                                                                                                                                                                                                                                                                                                                                      granulocyte-macrop epidermal growth f epidermal growth f epidermal growth f epidermal growth f epidermal growth f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          granulocyte-macrop
p-185 precursor -
protein-tyrosine k
acid phosphatase (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    granulocyte-macrop
granulocyte-macrop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
hypothetical prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein-tyrosine k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 1
```

			1	.,	.,	- 1	-1	.,	.,	.,	. 1	~	~	æ	~	
` -		, 1	7	7 1	7	7 1	7 1	7 1	7 1	7 1	7	1	ш 11	1	1	
	: > c											N	N	. 2	N	
130	227	120	114	111	104	98	89	82	83	65	62	1851	825	715	610	
۲	4 -	N	Ν	N	۳	N	N	N	N	N	N	N	H	N	Ν	
CON	TOCHAR	T35946	E72600	C35826	G69482	E90606	AI0221	T30135	E69489	T29066	F90177	T13980	EDBEXD	S73637	T32327	
cataronin i bread	carcitonin generre	probable regulator	hypothetical prote	hypothetical 13K p	hypothetical prote	. hypothetical prote	flagellar biosynth	hypothetical prote	_	hypothetical prote	hypothetical prote	calcium channel al	immediate-early pr	ATP-dependent prot	hypothetical prote	

## ALIGNMENTS

		÷		
A; No locule type: DNA A; Molecule type: DNA A; Residues: 832-909 <rex> A; Residues: 832-909 <rex> A; Cross-references: GB:L29395; NID:9459807; PIDN:AAA35809.1; PID:9459808 R; Tal, M.; King, C.R.; Kraus, M.H.; Ullrich, A.; Schlessinger, J.; Givol, D. Mol. Cell: Biol. 7, 2597-2601, 1987 A; Title: Human HER2 (neu) promoter: evidence for multiple mechanisms for transcriptio A; Reference number: 157622; MUID:87286898; PMID:3039351 A; Accession: 157622 A; Status: translated from GB/EMBL/DDBJ A; Molecule type: DNA A; Residues: 1-191 <tal></tal></rex></rex>	A;Title: Tyrosine kinase receptor with extensive homology to EGF receptor shares chroA;Reference number: A44188; MUID:86070181; PMID:2999974 A;Accession: A44188 A;Accession: A44188 A;Molecule type: DNA A;Residues: 740-910 <coui> A;Cross-references: GB:M12036; NID:g183988; PIDN:AAA35978.1; PID:g183989 A;Accession: B44188</coui>	K; Selmod, K.; Kallacta, N.; Toyoshima, K.; Kallacho, T.  Proc. Natl. Acad. Sci. U. S. A. 82, 6497-6501, 1985 A; Title: A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epid A; Reference number: A25491; MUID:86016729; PMID:2995967 A; Accession: A25491 A; Molecule type: DNA A; Residues: 737-1031 <sem> A; Cross-references: GB:M11767; NID:9182163; PIDN:AAA35808.1; PID:9553282 R; Coussens, L.; Yang-Feng, T.L.; Liao, Y.C.; Chen, E.; Gray, A.; McGrath, J.; Seeburg Science 230, 1132-1139, 1985</sem>	C;ACCESSION: A245/1; A24418; A34418; A57509; A57622.  R;Yamamoto, T.; Ikawa, S.; Akiyama, T.; Semba, K.; Nomura, N.; Miyajima, N.; Saito, T Nature 319, 230-234, 1986  A;Title: Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growt A;Reference number: A24571; MUID:8611863; PMID:3003577  A;Accession: A24571  A;Molecule type: mRNA A;Residues: 1-1255 <yam> A;Cross-references: GB:X03363; NID:931197; PIDN:CAA27060.1; PID:931198  B;Cross-references: GB:X03363; NID:931197; PIDN:CAA27060.1; PID:931198</yam>	RESULT 1 A24571 A24571 Protein-tyrosine kinase (EC 2.7.1.112) erbB2 precursor - human protein-tyrosine kinase (EC 2.7.1.112) erbB2 precursor - human N;Alternate names: c-erb-B-2 protein precursor; kinase-related transforming protein e C;Species: Homo sapiens (man) C;Date: 25-Oct-1987 #sequence_revision 06-Dec-1996 #text_change :1-Jun-1999

```
F;22-1255/Product: protein-tyrosine kinase erbB2 *status predicted <MAT>
F;22-653/Domain: extracellular *status predicted <EXT>
F;70-304/Domain: EGF receptor extracellular domain repeat <EE1>
F;395-605/Domain: EGF receptor extracellular domain repeat <EE2>
F;395-605/Domain: intracellular *status predicted <TMM>
F;654-675/Domain: intracellular *status predicted <INT>
F;718-993/Domain: protein kinase homology <KIN>
F;718-993/Domain: protein kinase ATP-binding motif
F;686,124,187,259,530,571,629/Binding site: carbohydrate (Asn) (covalent) *status predicted F;686/Binding site: phosphate (Thr) (covalent) (by protein kinase C) *status predicted F;753/Active site: Lys *status predicted F;753/Active site: Lys *status predicted F;1139,1221,1222,1248/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation)
              A;Reference number: I59065; MUID:86205844; PMID:3488413 A;Accession: I59085
                                                                      A;Residues: 1144 <MIY>
A;Cross·references: EMBL:X03021; NID:g31858; PIDN:CAA26822.1; PID:g31859
R;Kaushansky, K; O'Hara, P.J.; Berkner, K; Segal, G.M.; Hagen, F.S.; Av
Proc. Natl. Acad. Sci. U.S.A. 83, 3101-3105, 1986
A;Title: Genomic cloning, characterization, and multilineage growth-prom
                                                                                                                                                                                                                                             R;Miyatake, S.; Otsuka, T.; Yokota, T.; Lee, F.; Arai, K. EMBO J. 4, 2561-2568, 1985
A;Title: Structure of the chromosomal gene for granulocyte-macrophage A;Reference number: A91015; MUID:86030234; PMID:3876930
A;Accession: C24636
                                                                                                                                                                                                                                                                                                                                                                                    C; Date: 04 - De C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: GDB:ERBB2; NGL; NEU; HER-2
A;Cross-references: GDB:120613; OMIM:164870
A;Map position: 17921.1 17921.1
A;Introns: 25/1; 75/3; 147/1; 883/3
A;Note: the list of introns is incomplete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    granulocyte-macrophage colony-stimulating factor precursor [validated] -
N;Alternate names: colony-stimulating factor 2; GM-CSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:M16792; NID:g183983; PIDN:AAA58637.1; PID:g553332 C;Comment: Amplification and overexpression of this erbB-related gene occ
                                                                                                                                                                                                                   A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                        Date: 04-Dec-1986 #sequence_revision 04-Dec-1986 #text_change;Accession: C24636; I59065; A25169; A01853; A44175; JC1090;Miyatake, S.; Otsuka, T.; Yokota, T.; Lee, F.; Arai, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description: catalyzes the phosphorylation of a peptidyl tyrosine residue; Superfamily: epidermal growth factor receptor; protein kinase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                             Species: Homo sapiens (man)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Keywords:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19
  translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 autophosphorylation; duplication; glycoprotein; phosphoprotein; phospho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
from
  GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         42.3%; Score 292; DB 1; L
100.0%; Pred. No. 6.9e-281;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           erbB-related gene occurs in about
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1255;
                                                                            growth-promoting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       310
                                                                                                                                                                                                                                                                                                                                                                                                                 08-Dec-2000
                                                                                                                                                                                                                                                                                                  colony
                                                                                                                                    Adamson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          γd
                                                                                                                                                                                                                                                                                                  stimulatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                               activity
                                                                                                                                    J.₩.
                                                                                                                                 RESULT
148161
                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                용
```

```
p-185 precursor - golden hamster C; Speciles: Mesocricetus auratus (golder C; Date: 02-Jul-1996 #sequence_revision C; Accession: 148161 R; Nakamura, T.; Ushijima, T.; Ishizaka,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Description: stimulates the differentiation and proliferation of hematopoletic C;Superfamily: granulocyte-macrophage colony-stimulating factor C;Keywords: cytokine; glycoprotein; growth factor; macrophage; monomer; T-cell F;1-17/Domain: signal sequence #status predicted <SIG> F;18-144/Product: granulocyte-macrophage colony-stimulating factor #status experi F;44,54/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Molecule type: mRNA
A;Residues: 1-116,'T',118-144 <WON>
A;Residues: 1-116,'T',118-144 <WON>
A;Cross-references: GB:M10663; NID:g181145; PIDN:AAA52121.1; PID:g181146
A;Cross-references: GB:M10663; NID:g18146, PID:g18146, P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A: CLAIA, J. Science 228, 810-815, 1985
Science 228, 810-815, 1985
A;Title: Human GM-CSF: molecular cloning of
A;Title: Human GM-CSF: MUID:85218749; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:M11734; NID:g181149; PIDN:AAA52122.1; PID:g181150
R;Lee, F.; Yokota, T.; Otsuka, T.; Gemmell, L.; Larson, N.; Luh, J.; Arai, K.; Re
Proc. Natl. Acad. Sci. U.S. A. 82, 4360-4364, 1985
A;Title: Isolation of cDNA for a human granulocyte-macrophage colony-stimulating
A;Reference number: A01853; MUID:85242684; PMID:3925454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; ResIdues: 1-144 <FES>
A; Cross-references: GB:M13207; NID:g181147; PIDN:AAA98768.1; PID:g181148
A; Cross-references: GB:M13207; NID:g181147; PIDN:AAA98768.1; PID:g181148
A; Cross-references: GB:M13207; NID:g181147; PIDN:AAA98768.1; PID:g181148
A; Cloning: Acad. Sci. U.S.A. 82, 6250-6254, 1985
A; Title: Cloning: sequence, and expression of a human granulocyte/macrophage
A; Reference number: A25169; MUID:85298329; PMID:3898082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GDB:119812;
A;Map position: 5q23.2-5q31.1
A;Introns: 53/3; 67/3; 109/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
A; Residues: 18-21,'C',23-96,'L',98-144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Reference number: JC1090
A;Accession: JC1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: A44175;
A; Accession: A44175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GB:M11220; NID:g183363; PIDN:AAA52578.1; PR:Mong, G.G.; Witek, J.S.; Temple, P.A.; Wilkens, K.M.; Leary,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-144 <LEE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Gene: GDB:CSF2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-144 <CAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Clark,
                                                                                                                                                                                                                                                                                                                                                                                                                        138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       549 APARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEPTÇLQTRLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        669 CWEPVQE 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               609 LYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPFD 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPFD 137
                                                                                                                                                                                                                                                                                                                                                                                                                        CWEPVQE 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEPTCLQTRLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       s.c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    t: granulocyte-macrophage colony-stimulating
    site: carbohydrate (Asn) (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18.4%; Score 127; DB 1; L
100.0%; Pred. No. 6.5e-118;
                                                                                                                                        (golden hamster)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <WEN>
                                                                                         02-Jul-1996
    ۲
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           f the complementary PMID:3923623
                                                                                         #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PID:g183364
y, A.C.; Luxenberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA
                                                                                             18-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #status experiment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       purification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       were
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rennic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                prog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of
```

Nagao,

Yamazaki,

Ishika

```
A; Gene:
C; Super:
                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gene 140, 251-255, 1994
A;Title: Cloning and activation of the Syrian hamster neu A;Reference number: I48161; MUID:94193007; PMID:7908275
A;Accession: I48161
밁
                                                                                                                                                                                    F;723-988/Domain: protein kinase homology <KIN>F;723-988/Domain: protein kinase AFP-binding motif F;731-739/Region: protein kinase AFP-binding motif F;71,191,263,535-576,634/Binding site: carbohydrate (As F;691/Binding site: phosphate (Thr) (covalent) #status F;691/Binding site: phosphate (Thr) (covalent) #status F;758/Active site: Lys #status predicted
                                                                                                                                                                                                                                                                                                               C;Superfamily: epidermal growth factor receptor; protein kinase homology C;Keywords: ATP; autophosphorylattion; duplication; glycoprotein; phospho; F;1-19/Domain: signal sequence *status predicted <SIG>F;20-1260/Product: protein-tyrosine kinase new *status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R; Masui, T.; Mann, A.M.; Macatee, Carcinogenesis 12, 1975-1978, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Residues: 1-1260 <BAR>
A;Residues: 1-1260 <BAR>
A;Cross-references: EMBL:X03362; NID:g56745; PIDN:CAA27059.1; PID:g56746
A;Cross-references: EMBL:X03362; NID:g56745; PIDN:CAA27059.1; PID:g56746
A;Masui, T.; Mann, A.M.; Macatee, T.L.; Garland, E.M.; Okamura, T.; Smit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Title: The neu oncogene encodes an epidermal growth f A; Reference number: A24562; MUID:86118662; PMID:3945311 A; Accession: A24562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Bargmann, C.I.; Hung, M
Nature 319, 226-230, 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Rattus norvegicus (Norway ra
C;Date: 31-Dec-1988 #sequence_revision
C;Accession: A24562; A61204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein-tyrosine kinase (EC 2.7.1.112) neu precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F;726-734/Region:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Keywords: ATP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Reference number: A61204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                               ;658-680/Domain: transmembrane #status predicted <TMN>
                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               thiazolyl]formamide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-983/Domain: protein kinase homology <KIN>
26-734/Region: protein kinase ATP-binding motif
                      250 LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESM 301
                                                                                                                                                                    1227,1253/Binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      250 LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYT 309
235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                  authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct DNA sequencing of the rat neu oncogene transmembrane domain reveals no lyllformamide or N-methyl-N-nitrosourea.
nce number: A61204; MUID:92035293; PMID:1682063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FGASCVT 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FGASCVT 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYT 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      type: DNA
637-663,'V'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1-1254 <RES>
                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                    translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GB:D16295; NID:g493236; PIDN:BAA03801.1;
                                                                                                                                                                  site: phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  M.C.; Weinberg, R.A.
                                                                                                    7.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <MAS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 factor receptor;
                                                                                  0,
                                                                                                    Score 52;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 67;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31-Dec-1988
                                                                                                                                                                  (Tyr) (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                  for residue 25
                                                                                                    DB 1; Lo
1.3e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.6e-57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                          Length 1260;
                                                                                                                                                                                                                                   (Asn) (covalent)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        factor receptor-related
                                                                                                                                                                                                            predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                  as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proto-oncogene
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Val
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PID:g747595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   homology
                                                                                  0
                                                                                                                                                                  predicted
                                                                                                                                                                                                                                                                                                                                                           phosphoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Smith,
                                                                                Gaps
                                                                                                                                                                                                                                   #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R.A.;
                                                                                  0
                                                                                                                                                                                                                                 predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein.
                                                                                                                                                                                                                                                                                                                                                             phospho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cohen,
```

```
A:Molecule type: mRNA
A:Molecule type: mRNA
A:Molecule type: mRNA
A:Residues: 1-14, 'A', 16, 'ASC', 20, 'CF', 23, 'C', 25-65, 'WIMPTHPA', 74-211, 'A', 213-386 <VIH
A:Cross-references: EMBL:X52174; NID:g28321; PIDN:CAA36422.1; PID:g28322
A:Note: part of this sequence, including the amino end of the mature protein, was con
R:Sharief, F.S.; Lee, H.; Leuderman, M.M.; Lundwall, A.; Deaven, L.L.; Lee, C.; L1, S
Blochem. Biophys. Res. Commun. 160, 79-86, 1989
A;Title: Human prostatic acid phosphatase: cDNA cloning, gene mapping and protein seq
A;Reference number: A32419; MUID:89228054; PMID:2712834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: mRNA
A;Residues: 1-14, 'A',16, 'ASC',20,'CF',23,'C',25-94,'D',96-115,'R',117-214,'S',216-293
A;Cross-references: GB:M24902; NID:g189618; PIDN:AAA60022.1; PID:g189619
A;Note: the authors translated the codons GAC for residue 95 as Glu, CGT for residue
R;Tailor, P.G.; Govindan, M.V.; Patel, P.C.
Nucleic Acids Res. 18, 4928, 1990
A;Title: Nucleotide sequence of human prostatic acid phosphatase determined from a fu
A;Reference number: S11147; MUID:90370491; PMID:2395659
                                                                                        R;Virkkunen, P.H.; Hedberg, P.; Palvimo, J.J.; Bir submitted to the EMBL Data Library, September 1993 A;Description: Structural organization of human an
                                                                                                                                                                                                                                                                                                    A; Reference number: A; Accession: S38863
                                                                                                                                                                                                                                                                                                                                                                                                      A;Molecule type: mRNA A;Molecule type: mRNA A;Molecule type: mRNA A;Residues: 1-14, 'AFASC',20,'CF',23,'C',25-45,'H',47-65,'RIWPTHPA',74-138,'E',140-156 A;Cross-references: EMBL:X53605; NID:g35683; PIDN:CAA37673.1; PID:g35684 R;Banas, B.; Blaschke, D.; Fittler, F.; Hoerz, W. submitted to the EMBL Data Library, April 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEBS Lett. 236, 275-281, 1988

A;Title: Molecular cloning and sequence analysis of cDNA encoding A;Reference number: S01331; MUID:88312981; PMID:2842184

A;Accession: S01331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:M34840; NID:g189620; PIDN:AAA69694.1; PID:g189621
A;Note: part of this sequence, including the amino end of the mature pro
R;Vihko, P; Virkkunen, P; Henttu, P.; Roiko, K.; Solin, T.; Huhtala, M
FEBS Lett. 236, 275-281, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Reference number: A38608; MUID:91115848; PMID:1989985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Reference number: A; Accession: JH0610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochem. Biophys. Res. Commun. 184, 1468-1476, 1992
A;Title: Structure of human prostatic acid phosphatase
A;Reference number: JH0610; MUID:92272747; PMID:1375464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N;Alternate names: acid phosphatase, prostatic; orthophosphoric monoester processes: Homo sapiens (man)
C;Date: 17-Aug-1992 #sequence_revision 01-Dec-1995 #text_change 08-Dec-2000 C;Accession: JH0610; JS0693; A38608; S01331; A32419; S11147; S38863; S41251;
A; Reference number: S41251
A; Accession: S41251
                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-40 <BAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: mRNA
A; Residues: 1-386 < VAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:M97589; NID:g189611; PIDN:AAA60021.1; PID:g189613 R;Van Etten, R.L.; Davidson, R.; Stevis, P.E.; MacArthur, H.; Moore, D.L J. Biol. Chem. 266, 2313-2319, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-386 <SI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        acid
                                                                      equence in the human gene
                                                                                                                                                                                                                                                                                                                                                                          A; Description: Characterization of the promoter of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: preliminary; translation not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Accession: S11147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: JS0693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Sharief,
                                                                                                                                                                                                     A;Cross-references: EMBL:X71391; NID:g416530; PIDN:CAA50514.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ЛН0610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     phosphatase (EC 3.1.3.2) ACPP precursor [validated] -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            n: JH0610; JS0693; A38608;
F.S.; Li, S.S.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1-386 <SH3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <SHA>
                                                                                                                                                                                                                                                                                                                                          S38863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GB:M97580;
                                                                  promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GB:M97581; GB:M97582; GB:M97583; GB:M97584; GB:M97585;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               shown
                                                                                                                                                                     Birr, E.;
                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene.
                                                                                                                                                                                                                                                                                                                                                                       human prostatic
                                                                                                      prostate-specific acid
                                                                                                                                                                     Porvari,
                                                                                                                                                                                                     PID: g416531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              human prostatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S41251;
                                                                                                                                                                         Taavitsainen,
                                                                                                                                                                                                                                                                                                                                                                              acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     phosphohydr
                                                                                                                                                                                                                                                                                                                                                                          phosphata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Was
                                                                                                      phosph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         surfac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    con
```

```
F;1-17/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Banas, B.; Blaschke, D.; Fittler, F.; Hoerz, Biochim. Biophys. Acta 1217, 188-194, 1994
A;Title: Analysis of the promoter of the human A;Reference number: S42730; MUID:94153995; PMID A;Accession: S42730
                                                                                                                                                                                                      C;Accession: A61632
R;O'Brien, P.M.; Rothel, J.S.; Seow, H.F.; Wood, P.R.
Immunol. Cell Biol. 69, 51-55, 1991
A;Title: Cloning and sequencing of the cDNA for ovine granulocyte-macrophage colony-sti A;Reference number: A61632; MUID:91331592; PMID:1869289
A;Accession: A61632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;33-386/Product: acid phosphatase ACPP #status experimental <MAT>
F;43,86/Active site: Arg #status predicted
F;44/Active site: His (phosphohistidine intermediate) #status predicted
F;94,220,333/Binding site: carbohydrate (Asn) (covalent) #status experif;161-372,215-313,347-351/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                                                                                          granulocyte-macrophage colony-stimulating factor precursor - sheep
C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 28-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:X71391; NID:g416530; PIDN:CAA50514.1; PID:g416531 R;Sharlef, F.S.; L1, S.S. Biochem. Mol. Biol. Int. 33, 561-565, 1994 A;Title: Nucleotide sequence of human prostatic acid phosphatase ACPP gene. A;Reference number: 137175; MUID:95038536; PMID:7951074 A;A;Accession: 137175
                                                                                                                                      A; Residues: 1-144 <OAB>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Description: catalyzes the hydrolysis of a wide range of phosphate esters C;Superfamily: mammallan acid phosphatese C;Keywords: 9lycoprotein; phosphohistidine; phosphoprotein; phosphoric monor;F;1-32/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GDB:119644; OMIM:171790
A;Map position: 3q21.3-3q25.2
A;Introns: 40/3; 72/3; 101/3; 152/3; 185/3; 216/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-386 < RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Biochem. J. 277, 759-765, 1991
A;Title: Homodimer and heterodimer subunits of human prostate acid phosphatase
A;Reference number: S17042; MUID:91336999; PMID:1908222
A;Accession: S17042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:X74961; NID:g439657; PIDN:CAA52913.1; PID:g439658 R;Lee, H.; Chu, T.M.; L1, S.S.L.; Lee, C. Blochem. J. 277, 759-765, 1991
                                                                                                                   A;Cross-references: GB:X55991; NID:g6983759; PIDN:CAA39463.1;
                                                                                                                                                              A; Molecule type: mRNA
                                                                                                                                                                                A; Status: preliminary; not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                              A61632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene: GDB:ACPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Residues: 33-49 <LEE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1; Molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cross-references: EMBL:U07097; NID:g515995; PIDN:AAB60640.1; PID:g515997; Comment: This protein is synthesized under androgen regulation by epithelial cells
                                                                  Superfamily: granulocyte-macrophage colony-stimulating; 1-17/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Status:
                         Query Match
       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKEL 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1-40 <BA2>
    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.1%;
    3.2%;
                       . 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 35;
    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
22;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Z
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mman prostatic PMID:8110833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.4e-26;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
       1.1e-13
                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  260/3; 288/3; 323/2
                     Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 386;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           phosphoric monoester
                                                                                                              PID: 96983760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                phosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hydrol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 e
f
  C:Species: Bos primigenius taurus
C:Date: 31-Mar-1989 #sequence_revi
C:Accession: JL0037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 8
A44936
                                                                                                                                                                                                                                                   ο
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Blood 78, 930-937, 1991
A;Title: Molecular cloning &
A;Reference number: A44936;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;McInnes, C.J.; Ha
Gene 105, 275-279,
                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: mRNA
A; Residues: 1-144 <NAS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: A; Accession: A44936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Residues: 1-144 <MCI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                   FOBOGM
                                                                                                                                        RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R; Nash,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Accession: A44936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JH0469
                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                   631 HYKOHCPPTPE 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     598 QEPTCLQTRLELYKQGLRGSLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QEPTCLQTRLELYKQGLRGSLT
                                                                                                                                                                                                          HYKQHCPPTPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QEPTCLQTRLELYKQGLRGSLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QEPTCLQTRLELYKQGLRGSLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C.J.; Haig, D.M.
                                                                                                                                                                                                                                                                                               l Similarity
11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 100 22; Conservative
                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1991
```

```
A;Cross-references: GB:S49738; NID:g233566; PIDN:AAB19466.1; PID:g233567 A;Note: sequence extracted from NCBI backbone (NCBIN:49738), NCBIP:49739) C:Superfamily: granulocyte-macrophage colony-stimulating factor F;1-17/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: GB:X53561; NID:g1800; PIDN:CAA37632.1; PID:g1801 C;Comment: This protein is a glycoprotein cytokine produced and secre;Superfamily: granulocyte-macrophaecocolony-stimulating factor C;Keywords: cytokine; glycoprotein; growth factor; macrophage; monom F;1-17/Domain: signal sequence #status predicted <SIG>F;18-144/Product: granulocyte-macrophage colony-stimulating factor #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     granulocyte-macrophage colony-stimulating C;Species: Canis lupus familiaris (dog) C;Date: 17-Feb-1994 #sequence_revision 17-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: Cloning and expression of a cDNA encoding ovine A;Reference number: JH0469; MUID:92039044; PMID:1937025 A;Accession: JH0469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Ovis orientalis aries, Ovis ammon aries (domestic she C;Date: 31-Mar-1992 *sequence_revision 31-Mar-1992 *text_change C;Accession: JH0469; S16730
                                      granulocyte-macrophage colony-stimulating factor N; Alternate names: colony-stimulating factor 2; \alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F;44/Binding site: carbohydrate (Asn) (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             granulocyte-macrophage colony-stimulating facto
N;Alternate names: colony-stimulating factor 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schuening, F.; Appelbaum,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
#sequence_revision
                                                                                                                                                                                                                                                                     1.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and in vivo evaluation of canine granulocyte-macrophage; MUID:91329842; PMID:1868252
                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                       Score 11;
Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 22;
Pred. No.
                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
  31-Mar-1989 #text_change 27-Jan-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Έ.
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17-Feb-1994
                                                                                                                                                                                                                                                                         No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  factor precursor -
tor 2; GM-CSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  factor precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hammond, W.P.;
                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                       0.0095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.1e-13
                                           r precursor
GM-CSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (domestic sheep)
#text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                        Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    granulocyte-macrophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Boone,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dog
                                                              bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    monomer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           secreted by
                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                T.; Morris, C.F.; S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #status predicted
                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             various
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .0
                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         colon
```

```
epidermal growth factor receptor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 25-Jan-1991 #sequence_revision 25-Jan-1991 #text_change 10-Oct-1997
C;Accession: A36325
R;Petch, L.A.; Harris, J.; Raymond, V.W.; Blasband, A.; Lee, D.C.; Earp, H.S.
Mol. Ccell. Biol. 10, 2973-2982, 1990
A;Title: A truncated, secreted form of the epidermal growth factor receptor is a reference number: A36325; MUID:90258888; PMID:2342466
A;Accession: A36325; MUID:90258888; PMID:2342466
A;Accession: A36325
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-644 <PET>
A;Cross-references: GB:M37394
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: alternative splicing; AfP; growth factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mol. Cell. Biol. 12, 883-893, 1992
A;Title: An alternatively processed mRNA from the avian c-erbB gene enco. A;Reference number: A42032; MUID:92123214; PMID:1732751
A;Accession: A42032
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-527 <FLI>
A;Cross-references: GB:M77637; NID:g211737; PIDN:AAA48759.1; PID:g211738
A;Cross-references: GB:M77637; NID:g211737; PIDN:AAA48759.1; PID:g211738
A;Experimental source: liver
A;Note: sequence extracted from NCBI backbone (NCBIN:76892, NCBIP:76893)
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; growth factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Maliszewski, C.R.; Schoenborn, M.A.; Cerretti, D.P.; Wignall, J.M.; Picna, N.S.; c.Mol. Immunol. 25, 843-850, 1988

A;Title: Bovine GM-CSF: molecular cloning and biological activity of the recombinant A;Reference number: JL0037; MUID:89095971; PMID:3062386

A;Accession: JL0037

A;Molecule type: mRNA
A;Residues: 1-143 <AMAL>
C;Comment: This glycoprotein induces granulocyte, macrophage, and eosinophil colony C;Superfamily: granulocyte-macrophage colony-stimulating factor C;Keywords: cytckine; glycoprotein; growth factor; macrophage; monommer; T-cell F;1-17/Domain: signal sequence #status predicted <SIG>
F;18-143/Product: granulocyte-macrophage colony-stimulating factor #status predicted F;44,54/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 epidermal growth factor receptor - chicken
c;Species: Gallus gallus (chicken)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 18-Jun-1999
C;Accession: A42032
R;Filckinger, T.W.; Maihle, N.J.; Kung, H.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                          A36325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     598 QEPTCLQTRL 607
                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QCAAGCTGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QCAAGCTGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.3%;
                                             1.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 9; DB 2; Pred. No. 2.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
0;
                    Score 9;
Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 10;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
Mismatches
                      Š
                    . DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.092;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
9 ?
                      .
5. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 527
                                           Length 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 143
Indels
                                                                                                                                                                                                                                                                   factor receptor is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene encodes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
0
                                                                                                                                                                                                                                                                                                            Earp, H.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the recombinant pro
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
0;
                                                                                                                                                                                                                                                                   encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cosma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>^</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: S3
A; Accession: S30024
A; Molecule type: DNA
A; Residues: 1-29 <HA2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-29 <ISH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
                                                                  A; Accession: A23062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QCAAGCTGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QCAAGCTGP
Speiss,
```

```
A;Cross-references: EMBL:X00588; NID:g31113; PIDN:CAA25240.1; PID:g757924
A;Note: the authors translated the codon AAG for residue 540 as Asn
R;Ishii, S:; Xu, Y:; Stratton, R.H.; Roe, B.A.; Merlino, G.T.; Pastan, I.
Proc. Natl. Acad. Sci. U.S.A. 82, 4920-4924, 1985
A;Title: Characterization and sequence of the promoter region of the human A;Reference number: A25772; MUID:85270438; PMID:2991899
A;Accession: A25772
                                                                                                                                                                                                                                                                                                                                                         A; Title: Human epidermal growth factor receptor cDNA is homologous to a variety of RN A; Reference number: A00642; MUID:84245835; PMID:6330563
A; Accession: A00642
A; Molecule type: mRNA
A; Residues: 'RCAWRRA', 150-187, 'KSVIQAV', 195, 'M', 197, 'A', 199-222, 'S', 224-304, 'RA', 307-7, '98-799, 'Tp', 802-811, 'R', 813-942 <XUY>
A; Experimental source: A431 human carcinoma cells, which have large numbers of EGF re R; Lin, C.R.; Chen, W.S.; Kruiger, W.; Stolarsky, L.S.; Weber, W.; Evans, R.M.; Verma, Science 224, 843-848, 1984
A; Title: Expression cloning of human EGF receptor complementary DNA: gene amplificati A; Reference number: A43615; MUID:84196372; PMID:6326261
A; Accession: A43615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N;Contains: protein-tyrosine Kinase (L. C.)....., C) Species: Homo saplens (man) (2.) Species: Homo saplens (man) (2.) Species: Homo saplens (man) (2.) Accession: A00641; A25772; S30024; A38672; A00642; A43615; A23062; A05281; A60143; C.). Accession: A00641; A25772; S30024; A38672; A00642; A43615; A23062; A05281; A60143; R;Ullrich, A.; Coussens, L.; Hayflick, J.S.; Dull, T.J.; Gray, A.; Tam, A.W.; Lee, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues: 1-29 < HA2>
A; Cross-references: EMBL:X06370; NID:g31118; PIDN:CAA29668.1; PID:g31119
R; Haley, J.D.; Waterfield, M.D.
J. Biol. Chem. 266, 1746-1753, 1991
A; Title: Contributory effects of de Novo transcription and premature tran
A; Reference number: A38672; MUID:g1107677; PMID:1988448
A; Accession: A38672
A; Molecule type: DNA
A; Residues: 1-29 < HAL>
A; Cross-references: GB:M38425; NID:g181977; PIDN:AAA63171.1; PID:g553271
A; Cross-references: GB:M38425; NID:g181977; PIDN:AAA63171.1; PID:g553271
A; Experimental source: carcinoma cell line A431-7
R; Xu, Y; Ishii, S; Clark, A.J.L.; Sullivan, M.; Wilson, R.K.; Ma, D.P.;
Mature 309, 806-810, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:M11234; NID:g181981; PIDN:AAA52370.1; PID:g553272 R;Haley, J.; Whittle, N.; Bennett, P.; Kinchington, D.; Ullrich, A.; Waterfield, Oncogene Res. 1, 375-396, 1987 A;Title: The human EGF receptor gene: structure of the 110 kb locus and identific A;Reference number: S30024; MUID:88217333; PMID:3329716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: Human epidermal gro
A;Reference number: A00641;
A;Accession: A00641
                                                                                                                                                           A; Experimental source: epidermoid carcinoma cell line A431 R; Simmen, F.A.; Gope, M.L.; Schulz, T.Z.; Wright, D.A.; Ca Biochem. Biophys. Res. Commun. 124, 125-132, 1984
A; Molecule type: mRNA
A; Residues: 1028-1210 <SIM>
                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 713-964 <LIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: translation not shown
                                                                                                                 A; Reference number: A23062;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 309, 418-425, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               growth factor receptor precursor -
s: protein-tyrosine kinase (EC 2.7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   growth factor receptor cDNA sequence 41; MUID:84219729; PMID:6328312
                                                                                                                          MUID:85046483; PMID:6093780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30r - human
2.7.1.112)
                                                                                                                                                                                                          Carpenter,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kb locus and identificatio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ma, D.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aberrant expression
                                                                                                                                                                                                          G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transcript termi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human
                                                                                                                                                                                                          O'Malley,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Roe,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           epidermal
                                                                                                                                                                                                              Β.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3
```

```
A; Puerceke, N.C.; Phillips, H.K.; Qiu, T.H.; Copeland, N.G.; Earp, Genes Dev. 8, 399-413, 1994
A; Title: The mouse waved-2 phenotype results from a point mutation A; Reference number: A53183; MUID:94170986; PMID:8125255
A; Accession: A53183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Specie
C; Date:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
A53183
A;Title: Comparison of EGF receptor sequences as a guide A;Reference number: A43818; MUID:91232866; PMID:2030916 A;Accession: A43818
                                                                                                                Oncogene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    epidermal growth factor receptor precursor - mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; F; 1-24/Domain: signal sequence *status predicted <SIG> F; 25-1210/Product: EGF receptor *status predicted <MATY> F; 25-645/Domain: extracellular *status predicted <AMIY> F; 75-910/Domain: EGF receptor extracellular domain repeat <EE1> F; 390-6100/Domain: EGF receptor extracellular domain repeat <EE2> F; 346-668/Domain: transmembrane *status predicted <TMM> F; 369-1210/Domain: itransmembrane *status predicted <TMM> F; 369-1210/Domain: intracellular *st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: Functional independence of the epidermal growth A;Reference number: A33331; MUID:90003233; PMID:2790960 A;Contents: annotation; internalization signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: ATP-stimulated interaction between epidermal growth factor receptor and A;Reference number: A38023; MUID:84191554; PMID:6325948
A;Contents: annotation; receptor activity
A;Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded Dh R;Chen, W.S.; Lazar, C.S.; Lund, K.A.; Welsh, J.B.; Chang, C.P.; Walton, G.M.; De Cell 59, 33-43, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: protein
A; Residues: 25-30,'S', 32-51;454-467 <WEB>
R; Russo, M.W.; Lukas, T.J.; Cohen, S.; Staros,
J. Biol. Chem. 260, 5205-5208, 1985
                                                                                                                R; Avivi, A.; Lax, I.; Ullrich,
Oncogene 6, 673-676, 1991
                                                                                                                                                                                         A; Cross-references: GB:U03425
                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-1210 <LUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F; 1047-1210/Region:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;999-1046/Region: coated-pit mediated internalization signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F;710-975/Domain: protein kinase homology <KIN>
F;718-726/Region: protein kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A:Contents: annotation; ir C:Comment: Binding of EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 309, 270-273,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: protein
A; Residues: 740-744, 'X', 746-747 < RUS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Reference number: A60143; MUID: 85182650; A; Accession: A60143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Reference number: A05281; MUID:84172183; PMID:6324343
A;Accession: A05281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R; Mroczkowski,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Title: Identification of residues in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Species: Mus musculus (house mouse)
Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 18-Jun-1999
Accession: A53183; A43818; S24942; A28941; S45325; I49643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Superfamily: epidermal growth factor receptor; protein kinase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            745/Active site: Lys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128,175,352,413,444,528,603/Binding site: carbohydrate (Asn) (covalent) #status 745/Active site: Lys #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258 QCAAGCTGP 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  235 QCAAGCTGP 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GDB: EGFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B.; Mosig, G.;
0-273, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          inhibitory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GDB:120610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cohen,
                                                                                                                                                      A
:.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OMIM: 131550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 9; 1
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  receptor
                                                                                                                                                      Schlessinger, J.; Givol,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     လ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      leads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nucleotide binding PMID:2985580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to internalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          factor receptor
                                                                             study the ligand
                                                                                                                                                      D.; Morse,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       site
                                                                                                                                                                                                                                                                                                                                                                                                                                                     H.S.; Jenkins, N.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of.
                                                                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                           the EGF receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the EGF-receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from
                                                                             binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>م</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
Der,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             phospho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           superco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               predi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        С. Ј
                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
```

```
A:Cross-references: EMBL:X78987; NID:g488830; PIDN:CAA55587.1; PID:g488831 R:Paria, B.C.; Das, S.K.; Andrews, G.K.; Dey, S.K. Proc. Natl. Acad. Sci. U.S.A. 90, 55-59, 1993 A:Title: Expression of the epidermal growth factor receptor gene is regulat A:Reference number: 149643; MUID:93126380; PMID:7678348 A:Accession: 149643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: protein
A; Molecule type: protein
A; Residues: 689-694,'x',696-704,'L',706-707;989-992,'XX',995-996,'X',998-1000;1002-10
R; Hibbs, M. L.: Dunn, A.R.: Alexander, W.S.
submitted to the EMBL Data Library, April 1994
A; Description: The complete cDNA sequence of the Mouse Epidermal Growth Factor Recept
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Superfamily: epidermal growth factor receptor; protein kinase homology C;Keywords: ATP; growth factor receptor; kinase-related transforming protein; F;1-24/Domain: signal sequence #status predicted <SIG> F;648-670/Domain: transmembrane #status predicted <TMM> F;712-977/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                                             N;Contains: protein-tyrosine kinase (EC 2.7.1.112) erbB
C;Species: Gallus gallus (chicken)
C;Date: 28-Feb-1986 #sequence_revision 05-May-1995 #text_change 04-Feb-2000
                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
TVCHLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F;712-977/Domain: protein kinase homology <KIN>
F;720-728/Region: protein kinase ATP-binding motif
F;680,695/Binding site: phosphate (Thr) (covalent) #status experimental
F;697,1070,1071/Binding site: phosphate (Ser) (covalent) #status experimental
F;993/Binding site: (or 997) phosphate (Ser) (covalent) #status experimental
F;1028/Binding site: (or 1030 or 1032) phosphate (Ser) (covalent) #status experimenta
A;Cross-references: GB:M20386
R;N11sen, T.W.; Maroney, P.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 12-20,22-132 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J. Biol. Chem. 263, 13152-13138, A;Title: Epidermal growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 969-971, 'K', 973-1115, 'D'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Reference number: S24942
                                                       A; Molecule type: mRNA
A; Residues: 1-1223 <LAX>
                                                                                                               A; Reference number: A; Accession: A27720
                                                                                                                                         A;Title: Chicken epidermal growth factor (EGF) receptor: A;Reference number: A27720; MUID:88261272; PMID:3260329
                                                                                                                                                                                              R;Lax, I; Johnson, A.; Howk, R.;
Mol. Cell. Biol. 8, 1970-1978, 19
                                                                                                                                                                                                                                                        C; Accession: A27720; A00643
                                                                                                                                                                                                                                                                                                                                        epidermal growth factor receptor precursor - chicken N;Contains: protein-tyrosine kinase (EC 2.7.1.112) erbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Gene: EGFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Cross-references: GB:L06864;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-971, 'K', 973-1210 <VER>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: A; Accession: S45325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Reference number:
A;Accession: A28941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; Heisermann, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Cross-references: EMBL: Z12608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Eisinger, D.P.; Serrero, G. submitted to the EMBL Data Library, June 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues: 1-714 < AVI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1028/Binding site: (or 1030 or 1032) phosphate (Ser) (covalent) #s 1197/Binding site: phosphate (Tyr) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   258 QCAAGCTGP 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QCAAGCTGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.J.; Gill, G.N.
263, 13152-13158,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  growth factor receptor threonine and A28941; MUID:88330814; PMID:3138233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S45325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GB: X59698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.3%; Score 9; 1
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NID:g193001; PIDN:AAA53029.1;
  Goodwin,
                                                                                                                                                                                                 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                        Sap, J.; Bellot, F.; Winkler,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
  R.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
  Rottman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1210
     Ψ.
3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  serine residues
                                                                                                                                                                         CDNA
     Crittenden,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PID:9567201
                                                                                                                                                                      cloning, expression
                                                                                                                                                                                                                              M.; Ullrich,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           regulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               phosphorylate
  L.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                phospho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'n
     Raines
                                                                                                                                                                                                                                 Venn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mous
```

```
Query Match
Best Local Similarity
""" Phes 9; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              F;719-984/Domain: protein kinase homology <KIN>
F;717-735/Region: protein kinase ATP-binding motif
F;136,202,280,361,370,422,375,580,615,635/Binding site: carbohydrate (Thr) (covalent) #s
F;192,650/Binding site: carbohydrate (Ser) (covalent) #status predicted
F;192,650/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F;687/Binding site: Lys #status predicted
F;754/Active site: Lys #status predicted
F;1100,1183,1208/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation) #stat
                                                                                                                   밁
                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        granulocyte-macrophage colony stimulating factor - rat (fragment)
C:Species: Rattus norvegicus (Norway rat)
C:Date: 14-Feb-1997 #sequence_revision 14-Feb-1997 #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: c-erbB activation in ALV-induced erythroblastosis: novel RNA processing and proap. Reference number: A00643; MUID:85228222; PMID:2988784; A;Accession: A00643
Search completed: April 28, 2003, 13:46:15 Job time: 26 secs
                                                                                                                                                                                                                                                                                                                                  C;Superfamily: granulocyte-macrophage colony-stimulating factor
                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:U00620; NID:g392779; PIDN:AAA18281.1; PID:g392780
                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-127 <SMI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: A; Accession: I46269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title: Nucleotide sequence of the Lewis rat granulocyte-macrophage colony stimulating A; Reference number: I46269; MUID:94041474; PMID:8225444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          k;Smith, L.R.; Lundeen, K.A.; Diveley, J.P.; Carlo, D.J.; Brostoff, S.W.
Immunogenetics 39, 80, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Accession: I46269
R; Smith, L.R.; Lund
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pecific protein kinase F;1-30/Domain: signal s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Gene: erbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: GB:M10066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 585-1223 <NIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cell 41, 719-726, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;31-1223/Product: epidermal growth factor receptor #status predicted <MAT>;31-654/Domain: extracellular #status predicted <EXT>;81-307/Domain: EGF receptor extracellular domain repeat <EE1>;39-610/Domain: EGF receptor extracellular domain repeat <EE2>;59-610/Domain: transmembrane #status predicted <TMM>;678-1223/Domain: intracellular #status predicted <INT>
                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Superfamily: epidermal growth factor receptor; protein kinase homology Keywords: alternative splicing; ATP; autophosphorylation; glycoprotein; growth factor
                                                                                                                                             609 LYKQGLRG 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242 QCAAGCTGP 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                258 QCAAGCTGP 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15
                                                                                                                61 LYKOGLRG 68
                                                                                                                                                                                                                             Local Similarity
les 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           status predicted
site: phosphate (Tyr) (covalent) (by autophosphorylation) #sta
                                                                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 9; DB 1
B; Pred. No. 6.2
0; Mismatches
                                                                                                                                                                                                                                                       Score 8; |
; Pred. No.
                                                                                                                                                                                                                             0,:
                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
o. 6.2;
                                                                                                                                                                                                                                                                              Length 127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                             0
                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

Inden Million Sound Shift

...

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                    Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OLIGO
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-821-883-2
690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        April 28, 2003, 13:41:44 ; Search time 40 Seconds (without alignments) 2298.573 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              908470 seqs, 133250620 residues
  100.0
79.6
47.7
47.7
42.3
42.3
42.3
42.3
42.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A_Geneseq_101002:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MRAAPLLLARAASLSLGFLF......EPVQEGAPPPPAAAHHHHHH 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA198, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA199, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000, DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /SIDS2/gcgdata/geneseq/geneseqp-embl
/SIDS2/gcgdata/geneseq/geneseqp-embl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /SIDS2/gcgdata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA19
                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                      Ħ
AAE13109
AAE13108
AAE13110
AAE13111
AAE13111
AAB60408
AAB60408
AAB21200
AAM51145
AAB21200
                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   908470
                                          Human HER500-hGM-C
Human HER500 fusio
Human HER300-rGM-C
Human HER500-rGM-C
Human HER500-rGM-C
Human ErbB2 oncopr
Human ErbB2 extrac
Extracellular HER-
                                                                                                                                                                                                                                                                    Description
```

w	ω	ω	ū	9	σ	σ	7	~	7	$\vdash$	$\vdash$	1	7	æ	æ	9	9	9	9	9	9	9	9	9	9	9	9	9	9	ဖ	ø	9	292	9
9.	19.1	9.		24.1			5	<u>ب</u>	25.1	31.4	31.4	۲	40.1	1.	Η.					ε.	۲.	۲.		υ.	ν.	42.3			Ν.		۲.	۲.	42.3	42.3
583	266	266	1433	166	16	. 166	191	191	191	1179	397	217	1223	951	289	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	1200	919	919	782	712
23	23	21	14	22	22	19	22	20	19	22	22	22	23	21	22	23	23	23	23	23	22	22	22	22	21	21	21	20	17	21	23	21	18	23
AAE20483	AAM51146	AAB21201	AAR39568	AAB48763	AAB62074	AAW59345	AAB48767	AAY14572	AAW59354	AAE13123	AAE13122	AAE13121	AAU98923	AAY44993	AAE13120	AAU74545	AAU77114	AAM51143	AAE20479	AAE24067	AAB60167	AAG88267	AAB85458	AAE12130	AAY92620	AAY84780	AAB21198	AAW92406	AAW01111	AAB21208	AAM51148	AAB21203	AAW19764	AAM51149
 Human protein for	Her-2/	Human HER-2/neu pr		n ErbB2	ErbB2 protein doma	ErbB2	ErbB2			Jumen SART3-IC-HER	NY-ESO-IC-HER-2 me	human	3	v-erbB2EC f	Mature human HER-2		Her-2	Her-2/neu	Her-2,		transgene	/neu amino		Human tyrosine kin	hereg	acid seque	HER-2/neu		/neu protei		2/neu	Human HER-2∕neu fu	2-GM-CSF immun	Her·2/neu extracel

## ALIGNMENTS

X P X	PAX	PR	a PF	Y PD	XX	P X	so	SO	×	ξ	×ε	K E	KW	ΚW	KW	KW	××	DE	××	7 >	12	<b>.</b> .	ij	AAI	RES
Laus R, Vidovic D, Graddis T;	(DEND-) DENDREON CORP.	30-MAR-2000; 2000US-193504P.	30-MAR-2001; 2001WO-US10515.	11-0CT-2001.		WO200174855-A2.	Chimeric - Synthetic.	Chimeric - Homo sapiens.	HENDOO HON OUR ANDAON PAONUANI.	HERSON-POSE Fination protein	HER-2 protein: granulocyte-macrophage colony stimulating factor:	membrane distal intracellular domain; C-terminal tag; human; GM-CSF;	PAP protein; Ala Arg linker; membrane distal extracellular domain;	dendritic cell; colon cancer; breast carcinoma; ovarian cancer;	immunostimulatory component; T-cell mediated immune response; DC;	Immunostimulatory fusion protein; IFP; antigen component; therapy;		Human HER500-hGM-CSF fusion protein construct.	to the state of th	OR-TAN-2002 (first optic)	AABISIUS)		AAE13109 standard; Protein; 690 AA.	AAE13109 .	RESULT 1

δÃ

661

```
of A
18
                              2001-662965/76.
DB; AAD21565.
```

immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -

Claim 7; Page 26; 59pp; English.

immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 hGM-CSF fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular domains, an Ala Ala linker, a mature human granulocyte-macrophage colony stimulating factor (GM-CSF) sequence and a The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comporise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC) induced T-cell mediated cellular tag.

Sequence 690 **8** 

Query Best L Matches

Local

Similarity

100.0%;

Score 690; Pred. No. 0;

DB

Length

0

690;

Match

문 Ş

```
541
                                                                    541
                                                                                         481
                                                                                                               481
                                                                                                                                     421
                                                                                                                                                          421
                                                                                                                                                                                361
                                                                                                                                                                                                     361
                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                   \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MRAAPLLLARAASLSLGFLFLLEFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
TCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTDETSCATQIITFESFKENLKD
                                                                                      MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                                                                                                                                                                                                                                                GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                          APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                          EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV
                                                                                                                                                                                                                                                                    GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                    APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                               EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV
                                                                                                                                                                                                                           MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                 MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                   480
                                                                                                                                                         480
                                                                                                                                                                               420
                                                                                                                                                                                                   420
                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
```

õ

밁

S 밁 δõ ₽ Ş В Ş 밁 Ş

밁

밁 ş 밁 S В ð 밁 Ş

601

660

δÃ

멂

61 61

HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDTQEVQGYVLTAHNQVRQVPLQRLRI

120 120

60

δÃ

ب

MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET

Query Match
Best Local Similarity
Matches 549; Conserv

79.6%; ilarity 100.0%; Conservative

0;

Mismatches

0

0

Gaps

0

Score 549; D Pred. No. 0;

22;

Length

밁

밁 The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular domains and a C-terminal tag. Chimeric -Chimeric dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; C-terminal tag: human; HER-2 protein; HER500 fusion protein. Sequence N-PSDB; AAD21564. WPI; Laus Claim 7; Page 26; 59pp; English. 30-MAR-2001; 11-OCT-2001 Human HER500 fusion protein construct. AAE13108 (DEND-) DENDREON CORP 30-MAR-2000; 2000US-193504P Immunostimulatory immunostimulatory 661 immunostimulatory fusion protein comprising the intracel HER-2 and an antigen elicits an immune response to the a useful for the treatment of associated cancer associated 2001-662965/76 Vidovic standard; Homo sapid 2001WO-US10515 (first B sapiens. Ď component; fusion protein; IFP; antigen Protein; entry) 555 T-cell mediated Н ₹ 690 immune component; intracellular domain response; antigen ed -

```
ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                       Chimeric - Homo sapiens.
Chimeric - Rattus norvegicus
Chimeric - Unidentified.
An immunostimulatory fusion protein comprising the of HER-2 and an antigen elicits an immune response
                                      N-PSDB;
                                                                                                 (DEND-)
                                                                                                                        30-MAR-2000; 2000US-193504P
                                                                                                                                                 30-MAR-2001;
                                                                                                                                                                                                 WO200174855-A2
                                                                                                                                                                                                                                                                        ovalbumin-derived octapeptide; OVA;
                                                                                                                                                                                                                                                                                   membrane distal intracellular domain; C-terminal tag; hur HER-2 protein; granulocyte-macrophage colony stimulating
                                                                                                                                                                                                                                                                                                                      immunostimulatory component; T-cell mediated immune resudendritic cell; colon cancer; breast carcinoma; ovarian
                                                                                                                                                                                                                                                                                                                                                                        Human HER300-rGM-CSF fusion construct comprising OVA-derived peptide.
                                                                                                                                                                                                                                                                                                                                                                                                  28-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAE13112 standard;
                                                                          Laus
                                                                                                                                                                                                                                                                                                                                                                                                                          AAE13112;
                                                                                                                                                                                                                                                                                                            PAP protein; Ala Arg linker; membrane distal extracellular domain;
                                                                                                                                                                                                                                                                                                                                    lmmunostimulatory fusion protein; Il
lmmunostimulatory component; T-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LGLDVPAAA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                  2001-662965/76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGLDVPAAA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                 DENDREON CORP
                                      AAD21568
                                                                         Vidovic
                                                                                                                                                 2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                         Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein;
                                                                          Graddis
                                                                                                                                                                                                                                                                                                                                                                                                                                                 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                IFP; antigen
                                                                                                                                                                                                                                                                         rat;
                                                                                                                                                                                                                                                                         HER300-rGM-CSF
                                                                                                                                                                                                                                                                                                                                                component;
 intracellular domain to the antigen and
                                                                                                                                                                                                                                                                                                                                    response; DC;
                                                                                                                                                                                                                                                                                                human; GM-CSF;
                                                                                                                                                                                                                                                                        fusion
                                                                                                                                                                                                                                                                                                                         cancer;
                                                                                                                                                                                                                                                                        protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
```

```
RESULT 4
AALII 14
AALII 17
AAE 17
AAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Sim
Matches 329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER300 rGM-CSF fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 membrane distal extracellular domain, an Ala linker, a novalbumin (OVA)-derived immunodominant octapeptide, an Ala linker, a HER-2 membrane distal intracellular domain, a mature
                                                                              Chimeric - Homo sapiens.
Chimeric - Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                   dendritic cell; colon cancer; breast carcinoma; ovarian cancer; 
PAP protein; Ala Arg linker; membrane distal extracellular domain; 
membrane distal intracellular domain; C-terminal tag; human; OVA; 
HER-2 protein; ovalbumin-derived octapeptide; HER500 fusion protei
                                                                                                                                                                                                                                                                            Immunostimulatory fusion protein; IFP; antigen component; therapy; immunostimulatory component; T-cell mediated immune response; DC;
                                                                                                                                                                                                                                                                                                                                                                Human HER500
                                                                                                                                                                                                                                                                                                                                                                                                                        28-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAE13110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAE13110 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                is useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        granulocyte-macrophage colony stimulating factor (GM-CSF) sequence a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTY;TDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYODTILWKDIFHKNNOLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCOSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                protein; ovalbumin-derived octapeptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for the treatment of associated cancer associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Page 27; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     479 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                             fusion protein construct comprising OVA-derived octapeptide
                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     relates to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 47.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immunostimulatory fusion proteins (IFP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 329;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3.4e-293;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 479;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
```

```
RESULT 5
AAE13111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BXGXEXB
                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective idendritic cell (DC) induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular domain, an Ala Ala linker, an ovalbumin (OVA)-derived immunodominant octapeptide, upper 2 membrane distal extracellular domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e a
 Human HER500-rGM-CSF
                                                                                                  AAE13111 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 7; Page 26; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Laus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (DEND-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-MAR-2000; 2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-OCT-2001
                                                                                                                                                                                      301
                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -
                                                                                                                                                                                                    MPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                  CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                               VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI
                                                                                                                                                                                                                                                GCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                     GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                   CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-662965/76
                                                                                                                                                                                    MPNPEGRYTFGASCYTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                               HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DENDREON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vidovic D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             distal intracellular domain and a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47.7%;
 fusion
construct comprising OVA-derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 329; DB 22;
Pred. No. 3.9e-293;
O; Mismatches O;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

Ş

181 121

CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA

CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA

240

GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES

VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL

VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGCVLIQRNPQL

180 180

181

õ . B Ş В

121

밁

В

Ş

0

Š

```
Matches
                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 rGM-CSF fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, a movalbumin (OVA)-derived immunodominant octapeptide, HER-2 membrane distal intracellular domain, an Ala linker, a mature HER-2 membrane distal intracellular domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 200
N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; GM-CSF; HER-2 protein; granulocyte-macrophage colony stimulating factor; ovalbumin-derived octapeptide; OVA; rat; HER500-rGM-CSF fusion prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chimeric - Homo sapiens.
Chimeric - Rattus norvegicus.
Chimeric - Unidentified.
                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                     rat granulocyte-macrophage and a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 7; Page 27; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-MAR-2001; 2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200174855-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-MAR-2000; 2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (DEND-) DENDREON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Immunostimulatory fusion protein;
61
                             61 HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -
                                                                                                                                               1 MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI 120
                                                                                                                 MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-662965/76
DB; AAD21567.
                                                                                                                                                                                                                                   329;
                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                               697 AA;
                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORP
                                                                                                                                                                                                                                                        47.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                colony stimulating
                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                           Score 329; DB 22; pred. No. 4.6e-293;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H
                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IFP; antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                   factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mmune response; DC;
                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                (GM-CSF)
                                                                                                                                                                                                                                                                                      697;
                                                                                                                                                                                                                          ;0°
                                                                                                                                                                                                                                                                                                                                                                                                                                sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein.
                                                                                                                                                                                                                             Gaps
                                                                                                                 60
```

```
RESULT 6
AAB60408
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                             CC comprising administering an antibody which binds ErbB2 (HER2; AAB60398).

CI in particular, the anti-ErbB2 antibody is the murine monoclonal antibody CC 2C4 (AAB60396, AAB60397) or a humanised version of 2C4 (AAB60398).

CC AAAB60399). The invention also encompasses an isolated nucleic acid CC encoding a humanised ErbB2-binding antibody; vectors and host cells CC comprising such nucleic acids; the recombinant production of a humanised CC ErbB2-binding antibody; and a cytotoxic drug. The ErbB2-binding antibody and a cytotoxic drug. The ErbB2-binding antibodies CC growth factor alpha (TGF-alpha)-activated mitogen activated protein CC kinase (MAPK). The method of the invention is used for treating cancer. CC (especially colon cancer, rectal cancer, colorectal cancer, lung cancer (especially non-small cell lung cancer), or breast cancer (especially colon cancer). The antibodies may also have non-therapeutic cuses e.g., as affinity purification agents. Using an antibody which binds to ErbB2 to treat cancer is preferable to the use of EGFR-targetted CC drugs, as EGFR is also highly expressed in other tissues such as the CC liver and skin, where the active drugs. Antibodies which bind CErbB2 are anticipated to have a better safety profile than such drugs.

CC The present sequence represents human ErbB2.
                                                                                                                                                                                                                                                                                                                                                                                                                   WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   light chain variable region; cancer; cytostatic; EGFR-exprepidermal growth factor receptor; colon cancer; rectal car colorectal cancer; non-small cell lung cancer; metastatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Anti-ErbB2 monoclonal antibody 2C4; HER2; mouse; light chain variable region; cancer; cytostatic;
Sequence
                                                                                                                                                                                                                                                                                                wherein the cancer expresses epidermal growth factor receptor (EGFR)
                                                                                                                                                                                                                                                                                                         The invention relates to a method for treating cancer in a human patient
                                                                                                                                                                                                                                                                                                                                      Example 1; Fig
                                                                                                                                                                                                                                                                                                                                                                          Treating cancer in a human, where the cancer expresses epidermal growth factor receptor (EGFR), comprises administering an antibody which binds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GETH ) GENENTECH INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200100245-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          affinity purification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human ErbB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB60408;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB60408 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                        present sequence represents
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                           CW,
                                                                                                                                                                                                                                                                                                                                                                                                                                          Presta LG,
645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       oncoprotein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000WO-US17366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                      1A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0141316
                                                                                                                                                                                                                                                                                                                                    89pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                           Sliwkowsky
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ID NO:13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     colon cancer; rectal cancer; tumo cancer; metastatic breast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            329
                        ErbB2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGFR-expressing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            murine; humanised; VL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ng cancer;
tumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 7
AAB61593
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                         Agus
                                                                                                                                                                                                                                  WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98
```

Score

292;

DB 22;

Length

Query Match

Score

292;

DB 22;

Length

```
Best Local Similarity
                                                                    The ErbB family of receptor tyrosine kinases are important mediators of cell growth, differentiation and survival. The receptor family includes four distinct members including Epidermal Growth Factor Receptor (EGFR of ErbB1), HER2 (ErbB2 or pl85^neu), HER3 (ErbB3) and Her4 (ErbB4 or tyro2) The present invention relates to a method for treating prostate cancer. The method comprises administering an antibody which binds ErbB2 and blocks ligand activation of an ErbB receptor. Preferably, the antibody blocks binding of monoclonal antibody 2C4 to ErbB3 and/or blocks TGF-alpha activation of mitogen-activated protein kinase (MAPK). The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; ErbB2; antibody; ErbB
Sequence
                                                                                                                                                                                                                                                                                                                           Disclosure; Fig 1; 93pp; English
                                                                                                                                                                                                                                                                                                                                                                                                        Treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200100238-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB61593 standard; protein; 645 AA
                                                  present sequence is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-JUN-2000; 2000WO-US17423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                              ing prostate cancer in a human comprises administering an antibody binds ErbB2 and blocks ligand activation of an ErbB receptor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ErbB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scher HI,
645 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        extracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cytostatic;
                                                  the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sliwkowski MX
                                                  extracellular domain of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           monoclonal antibody 2C4; variable 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 4e-259;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 277
                                                                                                                                                                                                                              ဝ္ပ
```

100.0%;

Pred. No.

```
RESULT AND STATE OF THE STATE O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loc
Matches
                                                        The present sequence is the extracellular HER-2/neu protein. HER-2/neu a member of the tyrosine kinase family of receptor-like glycoproteins shows homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. An HER-2/neu fusion protein comprising HER-2/neu extracellular domain fused to a HER-2/neu phosphorylation domain may be used to treat or prevent cancer by eliciting or enhancing an immune response to the HER-2/neu protein. It may be used to treat malignancies such as breast, ovarian, colon, lung and
                                                                                                                                                                                                                                                                                                                                              HER-2/neu extracellular domain/phosphorylation domain useful for vaccinating against breast, ovarian, colon, prostate cancers -
                                          to treat malignancies such prostate cancers, and may be
                                                                                                                                                                                                                                                                                               Claim 2; Fig 9; 128pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  colon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200044899-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Extracellular HER-2/neu protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB21200 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-JAN-2000; 2000WO-US02164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HER-2/neu; oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hes 292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                         2000-505976/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cancer.
                       neoplasias
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORIXA CORP.
SMITHKLINE BEECHAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 100
92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0117976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tyrosine kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ovarian cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                             an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 4e-259;
0;
                                             antigen
                                             to vaccinate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cancer;
                                                                                                                                                                                                                                                                                                                                                                                         fusion proteins
                                                                                                                                                                                                                                                                                                                                                                    Lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                          HER-2/neu is oproteins and
                                          against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
RESULT 9
AAM51145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SQ
                                                                                                                                                                                                                                                                                                                                                                    XXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                         Her-2/neu fusion protein for treating or preventing ca
or enhancing an immune response to the protein, has He
extracellular domain fused to Her-2/neu intracellular
                                                                                              Claim 2;
                                                                                                                                                                                                                                 03-AUG-2000; 2000US-0632507
                                                                                                                                                                                                                                                                                                                                                                                                                    AAM51145 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                 phosphorylation
                                                                                                                                                                 WPI; 2002-241743/29
                                                                                                                                                                                  Cheever MA,
                                                                                                                                                                                                     (CORI-)
                                                                                                                                                                                                                                                                      14-FEB-2002
                                                                                                                                                                                                                                                                                                            Homo sapiens. .
                                                                                                                                                                                                                                                                                                                                                                              17-JUN-2002
                                                                                                                                                                                                                                                    03-AUG-2001; 2001WO-US24283
                                                                                                                                                                                                                                                                                          WO200212341-A2
                                                                                                                                                                                                                                                                                                                                                                                                  AAM51145;
                                                                                                                                                                                                                                                                                                                                tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTP,VTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                           Her-2/neu oncoprotein
                                                                                                                                                                                                     CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                             Fig 9;
                                                                                                                                                                                                                                                                                                                               kinase;
                                                                                                                                                                                                                                                                                                                                       oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                  Gheysen
                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                             141pp; English.
                                                                                                                 domain
                                                                                                                                                                                                                                                                                                                               receptor;
                                                                                                                                                                                                     BEECHAM
                                                                                                                                                                                                                                                                                                                                                                                                                    Protein;
                                                                                                                                                                                  Ď,
                                                                                                                                                                                                                                                                                                                                         cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42.3%;
                                                                                                                                                                                                      BIOLOGICALS
                                                                                                                                                                                                                                                                                                                                c-erbB2;
                                                                                                                                                                                                                                                                                                                                                                                                                    653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                           extracellular
                                                                                                                                                                                                                                                                                                                                         tumour; vaccine; human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 292; DB 21;
Pred. No. 4.1e-259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                               gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                   cancer by
Her-2/neu
                                                                                                                                                                                                                                                                                                                              p185;
                                                                                                                           or
P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                             eliciting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

The present sequence is that of the extracellular domain of human Her-2/neu (p185 glycoprotein or c-erbB2), an oncogenic self-protein and target for anti-cancer vectimes. The Her-2/neu gene is amplified and p185 is overexpressed in a variety of cancers, including breast, ovarian, colon, lung and prostate cancer. Her-2/neu (see AAM51143) is a member of the tyrosine kinase family

of receptor-like glycoproteins. It comprises an extracellular domain with homology to the epidermal growth factor receptor

```
RESULT 10
AAB21204
밁
                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         phosphorylation domain (or its DeltaPD fragment). An immune response to Her-2/neu protein is elicited or enhanced by administering the fusion protein in the form of a vaccine, or by transfecting cells of an animal ex vivo with a nucleic acid encoding the fusion protein, and delivering the transfected cells to the animal. The fusion proteins, nucleic acids, and isolated specific T-cells are useful for inhibiting the development of a cancer, especially breast, ovarian, colon, lung or prostate cancer in a patient. To cells that specifically react with a Her-2/neu fusion protein can be used to remove tumour cells from a sample in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ovarian cancers. The invention provides Her-2/neu fusion proteins, nucleic acids encoding them, viral vectors, and vaccines comprising the fusion proteins or nucleic acid molecules. In preferred fusion proteins, the extracellular domain of a Her-2/neu protein is fused to a Her-2/neu intracellular domain or
                                        29-JAN-1999;
                                                                  28-JAN-2000;
                                                                                              03-AUG-2000
                                                                                                                        WO200044899-A1
                                                                                                                                                   Synthetic
                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                       Human; HER-2/neu; oncogene; tyrosine kinase; cytostatic; vaccine;
breast cancer; prostate cancer; ovarian cancer; lung cancer;
                                                                                                                                                                                                                                                 Human HER-2/neu fusion protein
                                                                                                                                                                                                                                                                            12-JAN-2001
                                                                                                                                                                                                                                                                                                                              AAB21204 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                order to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                intracellular domain that also shows homology to EGFR. Its overexpression correlates with a poor prognosis in breast and
(CORI-) CORIXA CORP.

(SMIK ) SMITHKLINE BEECHAM
                                                                                                                                                                                                                                                                                                                                                                                                                              278
                                                                                                                                                                                                                                                                                                                                                                                                                                                           199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158
                                                                                                                                                                                                                                                                                                                                                                                                      259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                       NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                   NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                292;
                                                                                                                                                                                            cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             h 42.3%;
Similarity 100.0%;
92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             inhibit the development of cancer in a patient.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     653 AA;
                                                                   2000WO-US02164
                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                          fusion protein.
                                        99US-0117976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 292; DB 23;
; Pred. No. 4.1e-259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                 ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
RESULT 11
AAM51149
ID AAM5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             VQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 292; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      domain and a preferred portion of the phosphorylation domain of the human HER-2/neu protein. HER-2/neu is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. HER-2/neu fusion proteins may be used to treat or prevent cancer by eliciting or enhancing an immune response to the HER-2/neu protein. They may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 27; Fig 13; 128pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HER-2/neu extracellular domain/phosphorylation domain fusion proteins useful for vaccinating against breast, ovarian, colon, lung and
                                                                                                                                     Homo sapiens
                                                                                                                                                                                                         Her-2/neu extracellular domain-delta-phosphorylation domain
                                                                                                                                                                                                                                     17-JUN-2002
                                                                                                                                                                                                                                                                AAM51149;
                                                                                                                                                                                                                                                                                            AAM51149 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present sequence is a fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cheever MA,
                                                                    Domain
                                                                                              Domain
                                                                                                                                                                  tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                              218
                                                                                                                                                                                                                                                                                                                                                               259
                                                                                                                                                                                                                                                                                                                                                                                          278
                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            may be used as an antigen to vaccinate against these neoplasias.
                                                                                                                                                                                                                                                                                                                                                                                                                 CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ 78
                                                                                                                                                                                                                                                                                                                                                             NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTG7.SPGGLR 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                  kinase;
                                                                                                                                                                               oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    712 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gheysen
                                                                                                                                                                                                                                   (first entry)
                                                                  /note= "extracellular 654..712
                                                                                                         Location/Qualifiers
                                                       'note-
                                                                                                                                                                 receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        42.3%;
                                                                                                                                                                 cancer; tumour;
eptor; c-erbB2; ;
                                                     "phosphorylation domain fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.
                                                                                                                                                                                                                                                                                            712 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 292; DB 21;
Pred. No. 4.4e-259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein comprising the extracellular
                                                                                                                                                                 gene
                                                                                                                                                                               vaccine; human;
                                                                                                                                                                 therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 712;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                         fusion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

14-FEB-2002

WO200212341-A2

```
RESULT 12
AAW19764
ID AAW19
XX
AC AAW19
                                                                                                     á
                                                                                                                               밁
                                                                                 В
                                                                                                                                                  S
                                                                                                                                                                          밁
                                                                                                                                                                                                Ş
                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                          correlates with a poor prognosis in breast and ovarian cancers. The invention provides Her-Z/neu fusion proteins, nucleic acids encoding them, viral vectors, and vaccines comprising the fusion proteins or nucleic acid molecules. In preferred fusion proteins, the extracellular domain of Her-Z/neu is fused to a Her-Z/neu intracellular domain or phosphorylation domain (or its DeltaPD fragment). An immune response to Her-Z/neu protein is elicited or enhanced by administering the fusion protein in the form of a vaccine, or by transfecting cells of an animal ex vivo with a nucleic acid encoding the fusion protein, and delivering the transfected cells to the animal. The fusion proteins, nucleic acids, and isolated specific T-cells are useful for inhibiting the development of a cancer respecially breast. Ovarian colon lung or proteins of a
AAW19764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CORI-)
                        AAW19764 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                 cancer, especially breast, ovarian, colon, lung or prostate cancer in a patient. T cells that specifically react with a Her-2/neu fusion protein can be used to remove tumour cells from a sample in order to inhibit the development of cancer in a patient.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence is that of a fusion protein between the extracellular domain and a fragment (DeltaPD) of the phosphorylation domain of human Her-2/neu (see AAM51143), an oncogenic self-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Her-2/neu fusion protein for treating or preventing cancer by or enhancing an immune response to the protein, has Her-2/neu extracellular domain fused to Her-2/neu intracellular or
                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        obtained by recombinant DNA methods.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 37; Fig 13; 141pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  phosphorylation domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-AUG-2001;
                                                                                                        278
                                                                                                                               199
                                                                                                                                                      218
                                                                                                                                                                             139
                                                                                 259
                                                                                                                                                                                                    158
                                                                                                                                                                                                                         79
                                                                                                                                                                                                                                               98
                                                                                                                                                                                                                                                                      19
                                                                                                                                                                                                                                                                                            38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 target for anti-cancer vaccines.
                                                                              NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                   EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR 157
                                                                                                                             CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                        CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                          ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                        EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                    GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                  292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORIXA CORP.
SMITHKLINE BEECHAM BIOLOGICALS
                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                              712
                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001WO-US24283
                                                                                                                                                                                                                                                                                                                                                              Ā
                                                                                                                                                                                                                                                                                                                           42.3%;
                        782
                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                          Score 292; DB 23;
Pred. No. 4.4e-259;
                        ₽
                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Her-2/neu overexpression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The fusion protein can be
                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                     Length 712;
                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    eliciting
                                                                                                                                                                           198
                                                                                                                                                                                                                        138
                                                                                                                                                                                                                                                                    78
                                                                                                                                                                                                                                                                                           97
                                                                                                                                                                                                                                                                                                                  0
                   Q
                                                                 Š
                                                                                                               Ş
 밁
                                            밁
                                                                                         밁
                                                                                                                                                             Ş
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                      Matches
                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                              Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; AAT72725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-JUL-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Her2-GM-CSF; of growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-DEC-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-DEC-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Her2-GM-CSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-SEP-1997
 199
                      218
                                                                                                                                                                             Loca1
292;
                                            139
                                                                  158
                                                                                          79
                                                                                                                86
                                                                                                                                                                                                                                                        protein.
                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ruegg CL,
                                                                                                                                                                                                                                  782 AA;
```

```
A fusion protein (AAW19764) comprises Her2 (a growth factor receptor that is overexpressed in breast, ovarian can other cancer cells) and granulocyte-macrophage colony stimulating factor (GM-CSF). It is the expression product of a nucleic acid molecule (AAT72725) prepd. by PCR amplification of Her2 cDNA from a breast cancer cell line and fusion to GM-CSF cDNA. Fusion expression vectors can be used to transfect mammalian and insect cells. The Her2-GM-CSF fusion protein is used to generate anti-Her2 immunity. Tumour cells are eliminated by cytotoxic T lymphocytes activated in vivo or in vitro by exposure to antigen-presenting cells exposed to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Potent APC that activates T-cells to give multivalent cellular immune response - can also induce a cytotoxic T-cell response vertebrate subject
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (ACTI-) ACTIVATED CELL THERAPY
                                                                                                                                                                                                                                               ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                     EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                           ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                EVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fig 8; 45pp; English.
                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunostimulant fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              granulocyte macrophage colony stimulating factor;
r receptor; oncogene; immunostimulant; cancer; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9508-0579823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96WO-US20241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /label= Linker
656..782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               654..655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'label - Her2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ٤
                                                                                                                                                                                                                                                                                                                                                                           42'.3%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GM-CSF
                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                           Score 292; DB 18;
Pred. No. 4.7e-259
                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                           4.7e-259;
                                                                                                                                                                                                                                                                                                                                                                                                  Length 782;
                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                 157
                                                                                                                                                                                                                                                                                                   97
277
                                                                                            217
                                                                                                                                                138
                                                                                                                                                                                                                                                    78
                                                198
                                                                                                                                                                                                                                                                                                                                                    0;
```

õ

```
ARBSULT 13
ARBSULT 33
ARBSULS 31

                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
밁
                                          Š
                                                                                                      밁
                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present sequence is a fusion protein comprising the extracellular domain and the phosphorylation domain of the human HER-2/neu protein. HER-2/neu is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. HER-2/neu fusion proteins may be used to treat or prevent cancer by eliciting or enhancing an immune response to the HER-2/neu protein. They may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against these neoplasias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; HER-2/neu; oncogene; tyrosine kinase; cytostatic; vaccine; breast cancer; prostate cancer; ovarian cancer; lung cancer; colon cancer; fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HER-2/neu extracellular domain/phosphorylation domain fusion useful for vaccinating against breast, ovarian, colon, lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     03-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human HER-2/neu fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB21203 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 2; Fig 12; 128pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      prostate cancers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-505976/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-JAN-2000; 2000WO-US02164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           W0200044899-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                259
                                                                                                         79
                                                                                                                                                                                                                  19
                                                                                                                                                                                                                                            38 GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                               GAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQ
                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORIXA CORP.
SMITHKLINE BEECHAM
                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0117976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein; 919
                                                                                                                                                                                                                                                                                                                                                     42.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ņ
                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                        Score 292;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                     DB 21; I
                                                                                                                                                                                                                                                                                                                                                                               Length 919;
                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                n proteins
and
                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                         Gaps
                                                217
                                                                                                      138
                                                                                                                                                                                                                  78
                                                                                                                                                                                                                                                                     97
                                                                                                                                                                                                                                                                                                                         0;
```

```
RESULT 14
AAM51148
ID AAM51
XX
AC AAM51
XX
DT 17-JU
XX
 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
         response to Her-Z/neu protein is elicited or enhanced by administering the fusion protein in the form of a vaccine, or by transfecting cells of an animal ex vivo with a nucleic acid encoding the fusion protein, and delivering the transfected cells to the animal. The fusion proteins, nucleic acids, and isolated specific T-cells are useful for inhibiting the development of a cancer, especially breast, ovarian, colon, lung or prostate; cancer in a patient. The cells that specifically react with a Her-Z/neu fusion protein can be used to remove tumour cells from a sample in
                                                                                                                                                                                                    The present sequence is that of a fusion protein between the extracellular domain and phosphorylation domain of human Her-2/neu (see AAM51143), an oncogenic self-protein and target for anti-cancer vaccines. The fusion protein can be obtained by recombinant DNA methods. Her-2/neu overexpression correlates with a poor prognosis in breast and ovarian cancers. The invention provides Her-2/neu fusion proteins, nucleic acids encoding them, viral vectors, and vaccines comprising the fusion proteins or nucleic acid molecules. In preferred fusion proteins, the extracellular domain of a fusion proteins or proteins or nucleic acids encoding them.
                                                                                                                                                                                                                                                                                                                                                                                                                           or enhancing an immune response to the protein, has Her-2/neu extracellular domain fused to Her-2/neu intracellular or phosphorylation domain
                                                                                                                                                                                                                                                                                                                                                                                        Claim 2; Fig 12; 14lpp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-AUG-2000; 2000US-0632507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAM51148 standard;
                                                                                                                                                                         Her-2/neu protein is fused to a Her-2/neu intracellular domain or phosphorylation domain (or its DeltaPD fragment). An immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2002-241743/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cheever MA, Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-AUG-2001; 2001WO-US24283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200212341-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tyrosine kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Her-2/neu; oncogene; cancer; tumour; vaccine; human; p185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Her-2/neu extracellular domain-phosphorylation domain fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAM51148;
fusion protein can
order to inhibit th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (SMIK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORIXA CORP.
SMITHKLINE BEECHAM BIOLOGICALS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "extracellular domain"
654..919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
1..653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         receptor; c-erbB2; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein;
development of cancer in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "phosphorylation domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    277
```

Sox

Sequence

919

3

Query Match Best Local

Similarity

Length 919;

```
RESULT 15
AAB21208
   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
          The present sequence is the human HER-2/neu protein. It is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. An HER-2/neu fusion protein comprising a HER-2/neu extracellular domain fused to a HER-2/neu phosphorylation
                                                                                                                                                                                                                 (CORI-)
   domain
                                                                                         Disclosure; Fig 15; 128pp; English.
                                                                                                               prostate cancers -
                                                                                                                        HER-2/neu extracellular domain/phosphorylation domain fusion proteins useful for vaccinating against breast, ovarian, colon, lung and
                                                                                                                                                             N-PSDB;
                                                                                                                                                                                            Cheever MA,
                                                                                                                                                                                                                                                   29-JAN-1999;
                                                                                                                                                                                                                                                                        28-JAN-2000;
                                                                                                                                                                                                                                                                                               03-AUG-2000
                                                                                                                                                                                                                                                                                                                   WO200044899-A1
                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                        breast cancer;
                                                                                                                                                                                                                                                                                                                                                                                    Human; HER-2/neu;
                                                                                                                                                                                                                                                                                                                                                                                                          Human HER-2/neu protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                 12-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB21208 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98
                                                                                                                                                           2000-505976/45.
DB; AAA89736.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                                                                                                                                                                                                                                                                                cancer
                                                                                                                                                                                                                 CORIXA CORP.
SMITHKLINE BEECHAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                          Gheysen
                                                                                                                                                                                                                                                                        2000WO-US02164.
                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                  .99us-0117976
                                                                                                                                                                                                                                                                                                                                                                        prostate
                                                                                                                                                                                                                                                                                                                                                                          oncogene; tyrostate cancer;
   to treat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42.3%;
100.0%;
                                                                                                                                                                                            Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1200
                                                                                                                                                                                                                                                                                                                                                                          tyrosine kinase; cytostatic; vaccine;
cer; ovarian cancer; lung cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
 or prevent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 292; DB 23;
Pred. No. 5.4e-259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
neu phosphorylation eliciting or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
밁
 밁
                    Qy
                                           밁
                                                               δ.
                                                                                        ₽
                                                                                                           Q
                                                                                                                                   В
                                                                                                                                                         Š
                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                         8888888
                                                                                                                                                                                                                            Query Match
Best Local S
Matches 292
                                                                                                                                                                                                                                                                                                       enhancing an immune response to the HER-2/neu protein. It may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against
                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                               these neoplasias.
                                                                                        139
 259
                      278
                                            199
                                                                 218
                                                                                                               158
                                                                                                                                   79
                                                                                                                                                          98
                                                                                                                                                                                                      38
                                                                                                                                                                                                                             Local Similarity
nes 292; Conserv
                                                                                                                                                                               19
                                                                                                                                  NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329
                                                        CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                                   ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                            CKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHF
                                                                                       ELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPM
                                                                                                                                                                                                                                                                          1200
                                                                                                                                                                                                                            42.3%; Score 292; DB 21; larity 100.0%; Pred. No. 6.8e-259; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                  Length 1200;
                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                             0
                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                78
                                                                                                                                                         157
                                                                                                                                                                                                        97
                                                                                                               217
                                                                                                                                    138
                                                                  277
                                                                                         198
```

0

Search completed: Job time : 43 secs April 28, 2003, 13:44:37

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                        -Q-/cgn2_1/USFTO_spool/USO9821883/runat_28042003_104750_14608/app_query.fasta_1.839
-Q-/cgn2_1/USFTO_spool/USO9821883/runat_28042003_104750_14608/app_query.fasta_1.839
-DB-Published_Applications_NA -QFMT-fastap -SUFFIX-p2n .rnpb -MINMATCH-0.1
-LOOPCL-0 -LOOPEXT-0 -UNITS-bits -START-1 -END--1 -NATRIX-blosum62
-TRANS-human40.cdi -LIST-45 -DCCALION-200 -THR_SCORE-pct -THR_MAX-100
-THR_MIN-0 -ALIGN-15 -MODE-LOCAL -OUTFMT-pto -NORM-ext -HEAPSIZE-500 -MINLEN-0
-MAXLEN-2000000000 -USER-USO9821883_4CGN_1_1 80_erunat_28042003_104750_14608
-NCPU-6 -ICPU-3 -NO_XLPXY -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -LONGLOG
-DEV_TIMEOUT-120 -WARN_TIMEOUT-30 -THREADS-1 -XGAPDF-10 -XGAPEXT-0.5 -FGAPDP-6
-FGAPEXT-7 -YGAPOP-10 -YGAPEXT-0.5 -DELOP-6 -DELEXT-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                 Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Run on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Command line parameters:
                                                                                                                              Pred. No. is the number of results predicted by chance to have score greater than or equal to the score of the result being and is derived by analysis of the total score distribution.
3739
3473.5
2974
2959.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB seq
                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic search, using frame_plus_p2n mode.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Agapop 10.0, Xgapext
Ygapop 10.0, Ygapext
Fgapop 6.0, Fgapext
Delop 6.0, Delext
                                                                                                                                                                                 1.
2...
3...
5...
5...
6...
7...
110...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-821-883-2
3739
1 MRAAPLLLARAASL
  100.0
92.9
79.5
79.2
                                                                Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   мау
                                                                                                                                                                                                                                                                                                                                                                 Published_Applications_NA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 783854 seqs, 621352466 residues
                                                                                                                                                                             : /cgn2_6/ptodata/1/pubpna/US07_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/PCTUS_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/US08_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/US08_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/US09_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/US09_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/US09_PUBCOMB.seq:*
1: /cgn2_6/ptodata/1/pubpna/US10_NEW_PUB.seq:*
2: /cgn2_6/ptodata/1/pubpna/US10_NEW_PUB.seq:*
3: /cgn2_6/ptodata/1/pubpna/US0_NEW_PUB.seq:*
4: /cgn2_6/ptodata/1/pubpna/US0_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MRAAPLLLARAASLSLGFLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Copyright
                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/1/pubpna/US07_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/PCT_NEW_PUB.seq:*
/cgn2_6/ptodata/1/pubpna/US06_NEW_PUB.seq:*
/cgn2_6/ptodata/1/pubpna/US06_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8, 2003, 12:36:28; Search time 210 Seconds
                                                                 Length
  2070
2091
1665
1692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 5.1.4_p5_4578 (c) 1993 - 2003 Compugen Ltd.
                                                                   В
    10
                                                                 Ħ
 US-09-821-883-7
US-09-821-883-9
US-09-821-883-6
US-09-821-883-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.5
0.5
7.0
7.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (without alignments)
4083.173 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ЕРУОЕСАРРРРААЛНИННИ 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1567708
                                                                Description
             Sequence
Sequence
    Sequence
                                                                                                                                      ) have a
sing printed,
 Appli
Appli
Appli
Appli
            Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                     RESULT 1
US-09-821-883-7
                                                     US-09-821-883-7
                                                                                      NUMBER OF SEQ ID NOS: 30
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 7
LENGTH: 2070
TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                             Sequence 7, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2410.5
2410.5
2410.5
2405.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1587
1199.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2405.
2188.
                                                                                                                                                                                                                                                                                                                                                                                                                    684
675
674
674
669
655:5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              803
724.5
724.5
724.5
721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1188
1183
1183
1183
1182
1182
                                                                                                                                                                                                                                                                                                                                                                                                                    HER500-hGM-CSF
                                                                                                                                                                                                                                                                                                                                                                                                                    3.36e-315
3739.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1437
3955
3955
3955
```

ALIGNMENTS

construct

Length: Matches

2070 690

10

10

10 US-09-811-123-7
10 US-09-811-123-7
10 US-09-811-115-1
10 US-09-811-115-2
10 US-09-811-123-8
10 US-09-811-125-1
10 US-09-811-125-1
10 US-09-821-883-10
10 US-09-821-883-28
10 US-09-821-883-28
10 US-09-930-125-6
10 US-09-930-125-6
10 US-09-930-125-7
10 US-09-940-101-1
11 US-09-940-101-1
12 US-09-940-101-3
13 US-09-940-101-3
14 US-09-940-101-3
15 US-09-940-101-3
16 US-09-940-101-3
17 US-09-940-101-3
18 US-09-940-101-3
19 US-09-940-101-3
10 US-09-940-101-3
11 US-09-940-101-3
11 US-09-940-101-3
12 US-10-033-590-14
13 US-09-918-995-32765
10 US-09-925-301-990-826

Sequence 1, Appli Sequence 11, Appli Sequence 7, Appli Sequence 8, Appli Sequence 8, Appli Sequence 10, Appli Sequence 10, Appli Sequence 11, Appli Sequence 11, Appli Sequence 11, Appli Sequence 28, Appli Sequence 26, Appli Sequence 26, Appli Sequence 26, Appli Sequence 165, Appli Sequence 165, Appli Sequence 17, Appli Sequence 3, Appli Sequence 3, Appli Sequence 14, Appli Sequence 32765, Appli

321	Qy 301 MetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyr 	Qy 281 GlylleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSer 	Qy 261 AlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPheAsnHisSer	241 721	Qy 221 SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla 	Qy 201 ThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGly	Qy 181 CysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGlnLeuAlaLeu	Qy 161 LeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsnProGlnLeu	Qy 141 ProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGln	Qy 121 ValargGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAsp	Oy 101 GlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIle	Oy 81 LeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGln	Oy 61 HisteuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGlyAsnLeuGlu	Qy 41 SerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThr	Qy 21 LeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAla	Oy 1 MetargalaalaProLeuLeuLeualaargalaalaSerLeuSerLeuGlyPheLeuPhe	Percent Similarity: 100.00% Conservative: 0 Best Local Similarity: 100.00% Mismatches: 0 Query Match: 100.00% Indels: 0 DB: 10 Gaps: 0 US-09-821-883-2 (1-690) x US-09-821-883-7 (1-2070)
		Oy         Db	Oy      Db	780	Qy   11		200	180	Qy      160      Db	140	Oy      120 Db	100 ·	240	180	120	20 .	Qу Дъ
681 ProAlaAlaAlaHiSHiSHiSHiSHiS 690	661 PheLeuLeuValIleProPheAspCysTrpGluProValGlnGluGlyAlaProProPro 680	641 GluThrSerCysalaThrGlnIleIleThrPheGluSerPheLysGluAsnLeuLysAsp 660 [	1 LeuLysGlyProLeuThrMetMetAlaSerHisTyrLysGlnHisCysProProThrPro	1 ThrCysLeuGlnThrArgLeuGluLeuTyrLysGlnGlyLeuArgGlySerLeuThrLys	581 AlaalaGluMetAsnGluThrValGluValIleSerGluMetPheAspLeuGlnGluPro 600 	1 TrpGluHisvalAsnAlaIleGlnGluAlaArgArgLeuLeuAsnLeuSerArgAspThr 	541 LeuGlyLeuAspYalProAlaAlaAlaProAlaArgSerProSerProSerThroInPro 560	1 GluargelyalabroProSerThrPheLyselyThrProThralaGluAsnProGluTyr 	1. ProProProAlaPheSerProAlaPheAspAsnLeuTyrTyrTrpAspGlnAspProPro 	1 GlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGlyAlaAlaProGlnProH1s	1 ArgAlaLysThrLeuSerProGlyLysAsnGlyValValLysAspValPhaAlaPheGly 480 	PTOPTOSETPTOATGGIUGTYPTOLEUPTOALBALBARGPTOALBGIYALBTINTHEUGIU 460	1 AlaProLeuThtCysSerProGlnProGluTyrValAsnGlnProAsgValAsgProGln	1 LeuGITAR9TYTSerGluAspPrOThrValProLeuProSerGluThrAspGlyTyrVal 	Aspendiymendiymida.auysdiyhendinselhengininlamspeloseleldi 	Gludia Prodrigser ProLeukla Proserciudiya ladiyer Aspvar PreAspvir	1 AACTACCTTTCTACGGACGTGGGATCGGGCGCTGGGGGCATGGTCCACCACAGGCACCGC 1 SerSerSerThrArgSerGlyGlyGlyAspLeuThrLeuGlyLeuGluProSerGluGlu

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
 S
                              밁
                                                    Š
                                                                                    В
                                                                                                               Ş
                                                                                                                                             밁
                                                                                                                                                                    Š
                                                                                                                                                                                                     В
                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : LENGTH: 2091
: TYPE: DNA
: ORGANISM: Artificial Sequence
: FEATURE:
: OTHER INFORMATION: HER500*-rGM-CSF construct
US-09-821-883-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
US-09-821-883-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-821-883-2 (1-690) x US-09-821-883-9 (1-2091)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 9, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT SPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION UNMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
EQ ID NO 9
                               481
                                                                                       421
                                                                                                                                                                          121
                                                                                                                                                                                                                                   101
181 CysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGlnLeuAlaLeu
                                                          161
                                                                                                                  141
                                                                                                                                               361
                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                             241 CTCACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCTGCAGGATATCCAGGAGGTGCAG 300
                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MetArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPhe
                                                                                                                                                                                                                                                                                                                   ProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGln 160
                                                                                                                                                            ValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAsp 140
                                                                                                                                                                                                                    GlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIle 120
                                                                                                                                                                                                                                                                                                                                                                                                                                     LeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGln 100
                                                                                     CCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCAGGAGGCCTGCGGGAGCTGCAG
                                                                                                                                             GTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGACAATGGAGAC 420
                                                                                                                                                                                                      GGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCACTGCAGAGGCTGCGGATT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAGAGCTGCACCCCTCCTCGCCAGGGCAGCCAAGCCTTAGCCTTGGCTTCTTTT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.66e-292
3473.50
94.42%
91.70%
92.90%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels:
                                                                                                                                                                                                                                                                                                                    240
                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
```

					•													
_																		
Ωу	ф	р <sub>р</sub> Оу	оу Ор	dg Qy	Дb	P P	P 04	Db Qy	Ωу	Qy Db	Qу Db	Qy Db	оу	g Sy	P Qy	Qу	Dy Qy	Db
532	512 1561	492 1501	472 1441	452 1381	432 1321	412 1261	392 1201	372 1141	352 1081	332 1021	321 961	301 901	281 841	261 781	241 721	221 661	201 601	541
ThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaAlaProAla 5	LeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGly 5	GlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAspAsn 5	ValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrPro 4	AlaArgProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerProGlyLysAsnGly 4	ValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuProAla 4	LeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGluTyr 4	SerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrValPro 4	GlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLy3GlyLeuGln 3	ThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSerGlu 3	GlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyGlyAspLeu 3 	ySer      Arcccc	MetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyr 3	GlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSer 3	AlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPheAsnHisSer 2	GlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGluGlnCysAla 2	SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla 2	ThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGly 2	
551	531 1620		491 1500	471 1440		431 1320	411 1260	391 1200	371 1140	351 1080	331 1020	320 960	900	280	780	240 720	220	00
٠.	•	:								• •								

360

120

80 240 180

```
APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Conpositions and Methods for Der
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR FILING DATE: 2000-03-30
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FASTSEQ for Windows Version 4.0
                                                              S
                                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                             Pred.
Score:
                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
US-09-821-883-6
; Sequence 6, Application US
; Patent No. US20020061310A1
            밁
                         Š
                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                      US-09-821-883-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                   US-09-821-883-6
                                                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                 SEQ ID NO 6
LENGTH: 1665
                                                                                                                                                                                       TYPE: DNA
ORGANISM: Artificial S
FEATURE:
OTHER INFORMATION: HEI
                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1621
                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     572
            61
                             21
          MetArgAlaAlaProLeuLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPhe
                                                                                                                                                                                                                                                                                                                                                                                                                         TACCAGACGAACTGCCCTCCAACCCCGGAAACTGACTGAAATAGAAGTCACCACCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TyrLysGlnHisCysProProThrProGluThrSerCysAlaThrGlnIleIleThrPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ArgLeuLeuAsnLeuSerArgAspThrAlaAlaGluMetAsnGluThrValGluValIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ArgSerProSerProSerThrGlnProTrpGluHisValAsnAlaIleGlnGluAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCCTCCTAAATGACATGCGTGCTCTGGAGAACGAAAAGAACGAAGACGTAGACATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCTCACCCAACCCTGTCACCCGGCCCTGGAAGCATGTAGATGCCATCAAAGAAGCTCTG
                                                ATGAGAGCTGCACCCCTCCTCGCCAGGGCAGCAAGCCTTAGCCTTGGCTTCTTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCAGCGGCCGCCCCACC
                                                                                    (1-690) x US-09-821-883-6 (1-1665)
                                                                                                       5.94e-249
2974.00
99.46%
99.46%
79.54%
                                                                                                                                                                                            HER500 construct
                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                     US/09821883
                                                                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                       1665
554
0
1
1
                                                                                                                                                                                                                                                                                                                            Dendritic
                                                                                                                                                                                                                                                                                                                                                                                                                          2091
                                                                                                                                                                                                                                                                                                                                                                                                                                            690
                                                                                                                                                                                                                                                                                                                                                                                                                                                               2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1680
                             40
                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1800
Š
                   В
                                    Qy
                                                        밁
                                                                          Q
                                                                                              망
                                                                                                             Qy
                                                                                                                                   밁
                                                                                                                                                   Ş
                                                                                                                                                                        В
                                                                                                                                                                                       Ş
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                         1081
                                                                            361
 401
                                                                                                                 341
                                                                                                                                    961
                                                                                                                                                     321
                                                                                                                                                                        901
                                                                                                                                                                                         301
                                                                                                                                                                                                             841
                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                    261
                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                              221
                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                    201
                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                   781
                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                             161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                          SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla
                              AspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerPro
                                                        GluAlaProArgSerProLeuAlaProSerGluGlyAlaGlySerAspValPheAspGly
                                                                                             GGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAACACAGACACGTTTGAGTCC
                                                                                                                                                                                                                     GlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSer
                                                                                                                                                                                                                                                   AlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPheAsnHisSer
                                                                                                                                                                                                                                                                                      ProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HisleuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGlyAsnLeuGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LeuGlnArgTyrSerGluAspProThrValProLeuProSerGluThrAspGlyTyrVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCAGGAGGCCTGCGGGAGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGACAATGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCTGCAGGATATCCAGGAGGTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGln
```

660

220

240 720 260 280 280 840 600

180

140 420 160 480

420

1200

400

1140

1080

320 960 340 1020 360

```
밁
                     Ş
                                               ₽
                                                                   δÃ
                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                Pred
                                                                                                                                                                                                                                                                                                                     APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022-30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR APPLICATION NUMBER: US 60/193,504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 4
US-09-821-883-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                             US-09-821-883-2 (1-690) x US-09-821-883-8 (1-1692)
                                                                                                                                 Query Match:
                                                                                                                                                                   Score:
                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                 US-09-821-883-8
                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 8
LENGTH: 1692
                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 8, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                              .
No
:
                                                                                                                                                                                                                            OTHER INFORMATION: HER500* construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     501
  61
                        21
                                                                      _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ProProProAlaPheSerProAlaPheAspAsnLeuTyrTyrTrpAspGlnAspProPro 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGlyAlaAlaProGlnProHis 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGlu 460
                                                          MetargalaalaProLeuLeuLeualaargalaalaSerLeuSerLeuGlyPheLeuPhe
AlaProLeuThrCysSerProGlnProGluTyrValAsnGlnProAspValArgProGln 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGAGAGCTGCACCCCTCCTCCTGGCCAGGGCAGCCAAGCCTTAGCCTTGGCTTCTTGTTT
                                                                                                                  1.1e-247
2959.50
97.88%
97.88%
79.15%
                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                               for Dendritic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1440
                                             60
                                                                20
            В
           1141 GGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCTGCAA 1200
```

٠.	391	GlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeuGln	372	Qy	
0	114	CTAGGGCTGGAGGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTGGCACCcTCCC	1081	Db	
	371		352	Qy	
0	.08		Ñ	Db	
		lyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAspLe		Qγ	
0	02	ΑŢ	961	Db :	
	331	TyrLeuSerThrAspValGlySerGl		δ	
•		ATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGTGACTGCCTGTCCCTAC		Db	
	320	ProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysP		Qy	
	900	GCATCTGTGAGCTGCCCAGCCCTGGTCACCTACAACACAGACACGTTTGAGTCC	841	Db	
٠.	300	lyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSe	281	Qy	
•	840	GCCGGCTGCACGGGCCCCAAGCACTCTGACTGCCTGCCTG	781	Db	
	280	laGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPheAsnHisSe	261	Qy	
•	780	TGGCTGTGCCCGCTGCAAGGGGCCACTGCCCACTGACTGCTGCCATGAGCAGTGTGC	721	Db	
	260	lyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGluGlnCysA	241	Qy	
	720	TCCCGCTGCTGGGGAGAGAGTTCTGAGGGATTGTCAGAGCCTGACGCGCACTGTCTGT	661	Db	
	240	erArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAl	221	Qy	
	660	ACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCTGTTCTCCGATGTGTAAGGGC	601	В	
	220	ulleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGl	201	Qy	
	600	TGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAGCTGGCTCTC	541	Db	
	200	ysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGlnLeuAlaLe	181	Qy	
	540	CTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAACCCCCCAGCTC	481	Db	
	180	ArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsnProGlnLe	161	Qy	
	480	CCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCAGGAGGCCTGCGGGAGCTGCAG	421	В	
	160	roLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArqGluLeuGl	141	Qy	
	420	GTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGACAATGGAGAC	361	Дb	
	140	ArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAs	121	Qy	
	360	GCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCCACTGCAGAGGCTGCGGATT	301	Дb	
	120	lyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIl	101	Qy	
	300	CTCACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCTGCAGGATATCCAGGAGGTGCAG	241	ф	
	100	hrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGl	81	Qy	
	240	CACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGCTAGCAGGGAAACCTGGAA	181	망	
	08	isLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGlyAsnLeuG	61	Qy	
	180	TCGACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGTCCCGAGACC	121	망	
	60	$\tt erThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluTh$	41	Qy	

```
LENGTH: 4543
TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
NAME/KEY: CDS
LOCATION: (150)..(3914)
US-09-769-508-1
 Ş
                                            Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                  APPLICANT: STUART, SUSAN G.

APPLICANT: LANGTON, BEATRICE CLAUDIA
APPLICANT: HANCOCK, MIRIAM E.C.
APPLICANT: CHAO, LORRINE A.
APPLICANT: BLUGGOR, PETER
TITLE OF INVENTION: C-ERBB-2 EXTERNAL DOMAIN: GP75
FILE REFERENCE: BEBIO-111-C1
CURRENT APPLICATION NUMBER: US/09/769,508
CURRENT FILING DATE: 2001-01-26
                      US-09-821-883-2 (1-690) x US-09-769-508-1 (1-4543)
                                                                                                    Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 5
US-09-769-508-1
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                    SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/09769508 Patent No. US20020155527A1
                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin Ver. 2.1
EQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                 1675 CA-TCACCATCACCATCA 1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    532
                                                                                                                                                                                                                                                                                                                                                                                                                                             552 ArgSerProSerProSer 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     432 ValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuProAla 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               412 LeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGluTyr 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       392
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPhe-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaProAla 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCCAGCCTGAATAT 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCAGCGGCC-----GCA 1674
                                           7.1e-201
2426.00
40.66%
40.51%
64.88%
9
                                           Conservative: Mismatches: Indels: Gaps:
                                                                                       Length:
Matches:
                                                    2
23
746
18
```

129 329		
74 GGA	107	
28 Glyse		
14 TATACATTCGGCGCCAGCTGTGTGACTGCCTGTCCCTACAACTACCTTTCTACGGACGT	Db 101	
08 TyrThrPheGlyAlaSerCysValThrAlaCysProTyrAsnTyrLeuSerT		
300 FICHIELENGALIIIIYIASHIIILASPIILFINGGIUSELMECFIOASHFIOGIUSIYAIY 307 		
94 CACTCTGACTGCCTGCCTGCCTCCACTTCAACCACAGTGGCATCTGTGAGCTGCACTGC 9	o co	
68 HisSerAspCysLeuAlaCysLeuHisPheAsnHisSerGlyIleCysGluLeuHisCys 28	у 26	
34 GGGCCACTGCCCACTGACTGCTGCCATGAGCAGTGTGCTGCCGGCTGCACGG		
48 GlyProLeuProThrAspCysCysHisGluGlnCysAlaAlaGlyCysThrGlyPrc	4	
28 SercinaspoyscinserLeurnragrnrvalCysAlbalyclycysAlbargCysLys 24/ 		
14 TCTCGGGCCTGCCACCCCTGTTCTCCGATGTGTAAGGGCTCCCGCTGCTGGGGAGAGAGT 77	ъ 71	
208 SerArgAlaCysHisProCysSerProMetCysLysGlySerArgCysTrpGlyGluSer 227	Qy 20	
54 TGGAAGGACATCTTCCACAAGAACAACCAGCTGGCTCTCACACTGATAGACACCAACCGC 71	о О	
88 TrpLysAspIlePheHisLysAsnAsnGlnLeuAlaLeuThrLeuIleAspThrAsnArg 2		
94 TIGAAAGGAGGGTCTTGATCCAGCGGAACCCCCAGCTCTGCTACCAGGACACGATTTTG 65	υī	
68 LeuLysGlyGlyValLeuIleGlnArgAsnProGlnLeuCysTyrGlnAspThrIleLe	ш	
34 GTCACAGGGGCCTCCCCAGGAGGCCTGCGGGAGCTGCGAGCTTCGAAGGCCTCACAGAGAGTC	Db 53	
48 Val#hrclvAlascarProGlvGlvIanArcGlnIanGlnIanArcsarIan#hrclnIla 16	<u> </u>	
128 GluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAspProLeuAsnAsnThrThrPro 147 	Qy 12 Db 47	
14 AACCAAGTGAGGCAGGTCCCACTGCAGAGGCTGCGGATTGTGCGAGGCACCCAGCTCTTT 47	4	
08 AsnGlnValArgGln	у 1	:
54 GCCAGCCTGTCCTGCAGGATATCCAGGAGGTGCAGGGCTACGTGCTCATCGCTCAC 4	ω	
laSerLeuSerPheLeuGlnAspIleGlnGluValGlnGlyTyrValLeuIleAlaHis 1	Υ.	
oc bedrytshinelycysshinelyatianistyashibedshinelyhtistytseditothiash o/	Db 29	
34 ACAGACATGAAGCTGCGGCTCCCTGCCAGTCCCGAGACCCACCTGGACATGCTCCGCCAC		
48 ThraspMetLysLeuArgLeuProAlaSerProGluThrHisLeuAspMetLeuArgHis 67		
177GGGCTCCTCGCCCTCTTGCCCCCCGGAGCCGCGAGCACCCAAGTGTGCACCGGC 233	н-	
alLeuAlaLysGluLeuAlaArgGlyAlaAlaSerThrGlnValCysThrGl	Qy 2	
23 CATGGGGCCGGAGCCGCAGTGAGCACCATGGAGCTGGCGGCCTTGTGCCGCTGG	_	
uPheLeuLeuPhePheT	Qy	
	Db	

망

B 8

D Q

망

В

CAGCGGTGTGAGAAGTGCAGCAAGCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAG 1193	•	Qy	329 329
CACTTGCGAGAGGTGAGGGCAGTTACCAGTGCCAATATCCAGGAGTTTGCTGGCTG	•	Qy	
AAGATCTTTGGGAGGCCTGGCATTTCTGCCGGAGAGCTTTGATGGGGACCCAGCCTCCAAC 1313		Db	2334 GGCGCTTTTGGCACAGTCTACAAGGGCATCTGGATCCCTGATGGGGAGAATGTGAAAATT 2393
		. Qy	
ACTGCCCCGCTCCAGCCAGAGCAGCTCCAAGTGTTTGAGACTCTGGAAGAGATCACAGGT 1373	_	Db	CCAGTGGCCATCAAAGTGTTGAGGGAAAACACATCCCCCCAAAGCCAACAAAGAAATCTTA
		Оу	329 329
TACCTATACATCTCAGCATGGCCGGACAGCCTGCCTGACCTCAGCGTCTTCCAGAACCTG 1433		В	2454 GACGAAGCATACGTGATGGCTGGTGTGGGCTCCCCATATGTCTCCCGCCTTCTGGGCATC 2513 .
		Qy	329 329
CAAGTAATCCGGGGACGAATTCTGCACAATGGCGCCTACTCGCTGACCCTGCAAGGGCTG 1493	•	рь	2514 TGCCTGACATCCACGGTGCAGCTGGTGACACACCTTATGCCCTATGGCTGCCTCTTAGAC 2573
	•	Qy	329 329
. 3 - 1 OLE OLIO DE DE CAROLIDA DE SELOS ELLA CALOS DE CALOS DE LA CALOS DE		В	2574 CATGTCCGGGAAAACCGCGGACGCCTGGGCTCCCCAGGACCTGCTGAACTGGTGTATGCAG 2633
		Qy	329 329
CACCATAACACCCACTCTCTCTCTCCACACACACACCTCCCTCTCCACACCAC		. Dp	2634 ATTGCCAAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGGGACTTGGCCGCT 2693
		Qy	329 329
3.29 TEAL CONTRACTOR ACTOR ACT		В	2694 CGGAACGTGCTGGTCAAGAGTCCCCAACCATGTCAAAATTACAGACTTCGGGCTGGCT
		Qy	329 329
CTGGCCTGCCACCAGCTGTGCGCCCGCAGGGCACTGCTGGGGTCAGGGCCCACCCA	•	рb	2754 CTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTGCCCATCAAGTGG 2813
	•	Qy	329 329
GTCAACTGCAGCCAGTTCCTTCGGGGCCAGGAGTGCGTGGAGGAATGCCGAGTACTGCAG 1793		Db	2814 ATGGCGCTGGAGTCCATTCTCCGCCGGCGGTTCACCCACC
		Qy	329 329
COOL OKCHOLOCKOLOCKOLOCOLOCHERICEOKOCOLOCHERICEOKOCOLOCHERICEOKOCOLOCOLOCKOLOCKOLOCKOLOCKOLOCKOLOCK		ф	2874 GGTGTGACTGTGGGAGCTGATGACTTTTGGGGCCCAAACCTTACGATGGGATCCCAGCC 2933
	٠.	Qy	329 329
CCCCAGAATGGCTCAGTGACCTGTTTTGGACCGGAGGCTGACCAGTGTGTGT		Db	2934 CGGGAGATCCCTGACCTGCTGGAAAAGGGGGAGCGGCTGCCCCAGCCCCCATCTGTACC 2993
		Qy	329 329
CACTATAAGGACCCTTCCTCTCCTCGCCCCCCCCCCCCC	*	рь	2994 ATTGATGTCTACATGATCATGGTCAAATGTTGGATGATTGACTCTGAATGTCGGCCAAGA 3053
		Qy	329 329
E E C C CLAR COLOURING COLOUR COLOUR COLOUR COLOURING TO COLURING		Дb	3054 TTCCGGGAGTTGGTGTCTGAATTCTCCCGCATGGCCAGGGACCCCCAGCGCTTTGTGGTC 3113
		Qy	329 329
AACTGCACCCACTCCTGTGTGGGACCTGGATGACAAGGGCTGCCCCGCCGAGCAGAGAGCC 2093		Db	3114 ATCCAGAATGAGGACTTGGGCCCAGCCAGTCCCTTGGACAGCACCTTCTACCGCTCACTG 3173
		Qy	329 329
ACOCOTOTICALOCATOCATOCATOCATOCATACATACATACATACATACAT	•	рь	3174 CTGGAGGACGATGACATGGGGGGACCTGGTGGATGCTGAGGAGTATCTGGTACCCCCAGCAG 3233
		Qy.	330GlyAlaGlyGlyMetValHisHisArgHisArg 340
GTGGTCTTTGGGATCCTCATCAAGCGACGGCAGCAGAAGATCCGGGAAGTACACGATGCGG 2213		DЬ	3234 GCTTCTTCTGTCCAGACCCTGCCCCGGGCGCTGGGGGCATGGTCCACCACACGCACCCC 3293
	• · -	Оу	341 SerSerShrArgSerGlyGlyGlyAspLeuThrLeuGlyLeuGluProSerGluGlu 360
AGACTGCTGCAGGAAACGGAGCTGGTGGAGCCGCTGACACCTAGCGGAGCGATGCCCAAC 2273		Db	3294 AGCTCATCTACCAGGAGTGGGGGGGCCTGGACACTAGGGCTGGAGCCCTCTGAAGAG 3353
	-		

Ş

ρ

```
; LENGTH: 4530
; TYPE: DNA
; ORGANISM: HOMO :
US-09-877-177-11
                                                                                                                                                                                                                                                                                                                                                 В
                                                     Percent Similarity:
Best Local Similarity:
Query Match:
DB:
          밁
                      õ
                                                                                                                                                                                                                                     RESULT 6
US-09-877-177-11
                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                             Š
                                       US-09-821-883-2
                                                                                          Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                          ő
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/877,177
CURRENT FILING DATE: 2001-06-11
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 11
LENGTH: 4530
                                                                                                                                                                                                               Sequence 11, Application US/09877177 Publication No. US20020192652A1 GENERAL INFORMATION:
                                                                                                                                                                                 APPLICANT: Peter V. Danenberg et al. TITLE OF INVENTION: Method of determining TITLE OF INVENTION: Factor Receptor and H FILE REFERENCE: 11220/120
                                                                                                                                                                                                                                                                                                                      3774
                                                                                                                                                                                                                                                                                                                                                    3714
                                                                                                                                                                                                                                                                                                                                                                                                              3594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3474
                                                                                                                                                                                                                                                                                         3834
                                                                                                                                                                                                                                                                                                                                                                                 3654
                                                                                                                                                                                                                                                                                                                                                                                                                                           3534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3354
                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                        521
                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                               461
                                                                                                                                                                                                                                                                                                                                                                                                                            441
                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    381
                                                                                                                                                                                                                                                                                                                                     501
          94
       LeuGlyLeuAspValProAlaAlaAlaProAlaArgSerProSerPro
                                                                                                                                                                                                                                                                                                                                                         GlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGlyAlaAlaProGlnProHis
                                                                                                                                                                                                                                                                                                                                                                                       ArgAlaLysThrLeuSerProGlyLysAsnGlyVallValLysAspValPheAlaPheGly
                                                                                                                                                                                                                                                                                                                                                                                                                     ProProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGlu
                                                                                                                                                                                                                                                            CTGGGTCTGGACGTGCCA-----GTGTGAACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                                                  GGTGCCGTGGAGAACCCCGAGTACTTGACACCCCAGGGAGGAGCTGCCCCTCAGCCCCAC
                                                                                                                                                                                                                                                                                                                                                                                AGGGCCAAGACTCTCCCCCAGGGAAGAATGGGGTCGTCAAAGACGTTTTTGCCTTTGGG
                                                                                                                                                                                                                                                                                                                                                                                                            CCCCCTTCGCCCGAGAGGGCCCTCTGCCTGCTGCCGACCTGCTGGTGCCACTCTGGAA
                                      (1-690)
                                                                                                                       sapiens
                                                     1.29e-200
2423.00
41.148
40.758
64.808
                                     x US-09-877-177-11 (1-4530)
                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                         HER2-New G
                                                                                                                                                                                         Gene
                                                           5
21
736
                                                                                                                                                                                                Growth
                                                                                                                                                                                         Expression
                                                                                                                                                                                                                                                            3935
                                                                                                                                                                                                                                                                          556
        153
                                                                                                                                                                                                                                                                                         3893
                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                     3833
                                                                                                                                                                                                                                                                                                                                                  3773
                                                                                                                                                                                                                                                                                                                                                                500
                                                                                                                                                                                                                                                                                                                                                                                3713
                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                            3,653
                                                                                                                                                                                                                                                                                                                                                                                                                           460
                                                                                                                                                                                                                                                                                                                                                                                                                                          3593
                                                                                                                                                                                                                                                                                                                                                                                                                                                         440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3413
Ş
              밁
                                            뫄
                                                           Ş
                                                                          В
                                                                                     δÃ
                                                                                                      B
                                                                                                                    Ş
                                                                                                                                                 Ş
                                                                                                                                                                                Š
                                                                                                                                                                                                            γQ
                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                             δÃ
                                                                                                                                     ₽
                                                                                                                                                                   B
                                                                                                                                                                                                밁
                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                1165
                                              1105
                                                                          1045
                                                                                          318
                                                                                                         985
                                                                                                                                      925
                                                                                                                                                     278
                                                                                                                                                                    865
                                                                                                                                                                                                805
                                                                                                                                                                                                               238
                                                                                                                                                                                                                              745
                                                                                                                                                                                                                                             218
                                                                                                                                                                                                                                                           685
                                                                                                                                                                                                                                                                                         625
                                                                                                                                                                                                                                                                                                                      565
                                                                                                                                                                                                                                                                                                                                                  505
                                                                                                                                                                                                                                                                                                                                                                138
                                                                                                                                                                                                                                                                                                                                                                                445
                                                                                                                                                                                                                                                                                                                                                                                                            385
                                                                                                                                                                                                                                                                         198
                                                                                                                                                                                                                                                                                                      178
                                                                                                                                                                                                                                                                                                                                   158
                                                                                                                                                                                                                                                                                                                                                                                             118
                                                                                                                                                                                                                                                                                                                                                                                                                                          325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                                                                           98
                                                                                                                                                                                                                                                                                                                                                                                                                                                         78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18
                                                                          ValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGlu
                                                                                                                                                                                                                             AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg
                                                                                                                                                                                                                                                                                                                                                                              GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer
                                              AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT
                                                                                                                                                                                                                                                           CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATG
                                                                                                                                                                                                                                                                   LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysH1sProCysSerProMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg '37
                GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT
                                                                                                                                                                                                AATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCCAGGAGGCCTGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -GGGCTCCTCCTCGCCCTCTTGCCCCCC
                                              1164
                                                                                                        1044
                 1224
                                                                            1104
                                                                                                                       317
                                                                                                                                      984
                                                                                                                                                     297
                                                                                                                                                                    924
                                                                                                                                                                                                           25,7
                                                                                                                                                                                                                              804
                                                                                                                                                                                                                                                                                                                                    177
                                                                                                                                                                                                                                                                                                                                                                                504
                                                                                                                                                                                                                                                                                                                                                                                                            444
                                                                                                                                                                                                                                                                                                                                                                                                                           117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20,
                               329
                                                                                          329
                                                                                                                                                                                  277
                                                                                                                                                                                               864
                                                                                                                                                                                                                                            237
                                                                                                                                                                                                                                                           744
                                                                                                                                                                                                                                                                         217
                                                                                                                                                                                                                                                                                         684
                                                                                                                                                                                                                                                                                                      197
                                                                                                                                                                                                                                                                                                                      624
                                                                                                                                                                                                                                                                                                                                                  564
                                                                                                                                                                                                                                                                                                                                                                157
                                                                                                                                                                                                                                                                                                                                                                                              137
                                                                                                                                                                                                                                                                                                                                                                                                                                          384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     264
                                                             329
```

Ş

	Db	329 329
371	Qy	2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2304
y 351 LeuThrLeuGlyLeuGluProSerGluGluGluGluAlProArgSerProLeuAlaProSer 370 y 351 LeuThrLeuGlyLeuGluProSerGluGluGluAlProArgSerProLeuAlaProSer 370 b 3325 CTGACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTGGCACCCTCC 3384	Qy Oy	
	Db	329 329 2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2244
3205 331	Ov	2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTCGTCTTTGGGATCCTCATCAAGCGACGG 2184
330	Оу	
b 3145 CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTG 3204	da	GACAAGGGCTGCCCGCGAGCAGAGAGAGCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG
y 329 329	Qy	329 329
b 3085 ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	Db	はく ししゅうしょ しんしゅうしゅうじゅうしゅうじゅく とうしゃく とうじゅうじゅうじゅうじゅうじゅうじゅうじゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅ
у 329 329 329	γ	1940 COLINCATOLOCAMO DE LA MARCOLOTOCO DE CONTRATOLOCAMO DE CONTRA
b 3025 TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGGAGTTGGTGTCTGAATTCTCCCGC 3084	Db	このではつうしている。 こうこうじょう こうこうこう こうこうじゅう こうこうじゅう こうじゅうじゅう こうじゅうこう マラン・コントラン・コー
у 329 329	,	ריפטשפה בופער בעמומומו מופרומו מרריב בי מריב בעווא בעור בער בער בער בער בער בער בער בער בער בע
b 2965 GAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 3024	מם	ついていまつい とうはい はいさい とうしょく まいく まいく ないりょう いっぱん はいけい はいかい とうしょう にんしょう しゅうしゅう こうしゅう こう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こう こうしゃ こうしゅう こうしゅう こう こうしゅう こう こう こう こう こうしゅう こう
у 329 329	 	
b 2905 GGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG 2964	Дd	ないしょうしょうしゅう ようしょうじゅん くしょうじゅん ひょうしゅう まいしょう アングライン ひょうしょう はんしょう はんしょう アングライン はっぱん しょうしゅう しゅうしゅう しゅんり しゅうしゅう しゅうしゅん しゅんり しゅんり しゅうしゅん しゅん しゅんり しゅんり しゅん しゅんり しゅんり しゅん しゅんり しゅんり
у 329 329	Ωγ	
2845 TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT 2904	da Db	GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG
329 329	, Qy	
2785 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG	Db	1705 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGGCCAG 1764
y 329 329	Qy	
2725 GTCAAAATTACAGACTTCGGGCTGGCTGGTGGACATTGACGAGACAGAGTACCAT	Db	1645 CGGCCAGAGGACGAGTGTGTGGGGCGAGGGCCTGGCCTG
ω S S S S S S S S S S S S S S S S S S S	Qy	329 329
2665 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT	. Db	1585 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1644
28		329 329
2605 TCCCAGGACCTGCTGAACTGGTGTATGCCAAAGGGGATGAGCTACCTGGAGGAT		1525 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCACC
329	Qy	
2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAAACCGCGGGACGCCTGGGC 2604	Db	GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG
y 329 329	Qy	
b 2485 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2544	Db	CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT
у 329 329	Qy	
b 2425 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 2484	dd .	GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC
y 329 329	γο	
2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2424	, dd	GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG
y 329 329 ;	Qy	
b 2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2364	da	1225 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 1284
	-	

õ В Ş 밁

Ş

В á Ş

망 δÃ Š ₽

2036

101

1916

81

1856

1796

41

21

141· 2096

2756

329

2696

329

2636

321

2576

2516

281

301

2456

261

2336 241

2396

2276

221

```
APPLICANT: Mark Sliwkowski
TITLE OF INVENTION: METHODS OF TREATMENT USING ANTI-ErbB.
TITLE OF INVENTION: ANTIBODY-MAYTANSINOID CONJUGATES
FILE REFERENCE: GENENT.073A2
CURRENT APPLICATION NUMBER: US/09/811,123
CURRENT FILING DATE: 2001-03-16
PRIOR APPLICATION NUMBER: 60/238.327
PRIOR APPLICATION NUMBER: 09/602,530
PRIOR FILING DATE: 2000-06-23
PRIOR FILING DATE: 2000-06-23
NUMBER OF SEQ ID NOS: 11
                        Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                     Pred.
                                                                                                                         ; FEATURE:
; OTHER INFORMATION:
US-09-811-123-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
 US-09-821-883-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                Sequence 7, Application US/09811123 Patent No. US20020001587A1
                                                                                                                                                                                                                                                                                                                                                                                                                          -09-811-123-7
                                                                                                                                                                                                            SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                               APPLICANT: Sharon Erickson
APPLICANT: Ralph Schwall
APPLICANT: Mark Sliwkowsk
                                                                                                                                                      ORGANISM: Artificial Sequence
                                                                                                                                                                         TYPE: DNA
                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                     ID NO 7
ENGTH: 9274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3445
                                                                                     ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GlyValValLySASpValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlaArgSerProSerPro 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACCTCTATTACTGGGACCAGGACCCACCAGGAGCGGGGGGGCTCCACCCAGCACCTTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGGTCGTCAAAGACGTTTTTGCCCTTTGGGGGGTGCCGTGGAGAACCCCCGAGTACTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGCCCGACCTGCTGCTACTCTGGAAAGGGCCAAGACTCTCTCCCCCAGGGAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerProGlyLySASn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCGAGAGGGCCCCTCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAAGCCTCCCCACACATGACCCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA-----GTGTGA 3918
 (1-690)
                                                                                                                                    Vector Sequence
                      3.81e-200
2422.00
41.128
40.438
64.788
 ×
US-09-811-123-7 (1-9274)
                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                             4.0
                        9274
528
9
31
738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3564
                                                                                Ş
                                  δÃ
                                                          밁
                                                                                                           В
                                                                                                                                δÃ
                                                                                                                                                          밁
                                                                                                                                                                                  Ş
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
            뭐
                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1695
                                                                                                                                                            2517
                                                                                                                                                                                                            2457
                                                                                                                                                                                                                                                           2397
                                                                                                                                                                                                                                                                                                           2337
                                                                                                                                                                                                                                                                                                                                                             2277
                                                                                                                                                                                                                                                                                                                                                                                                                                                            2157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1797
                                                                                                                                                                                                                                                                                                                                                                                                              2217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1917
                                                                                                                                    302
                                                                                                                                                                                                                                                                                   242
                                                                                                                                                                                                                                                                                                                                  222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ν
                                                                        TyrLeuSerThrAspValGlySer----
                                                                                                         ThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGlnGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThrHis
                                                                                                                                                                                                                                                                                                                       ArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAlaGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsnProGlnLeuCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGlyAsnLeuGluLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAlaSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCCCCGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGAGCTGGCG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ArgAlaAlaProLeuLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPheLeu
            ACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGTGCCCGAGTGTGC
                                                             TACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCCTGCACAACCAAGAGGTG
                                                                                                                                                                                                                                                                                                           CGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAACCCCCCAGCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGAACAATACCACCCCTGTCACAGGGGCCTCCCCAGGAGGCCTGCGGGAGCTGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCTGCAGGATATCCAGGAGGTGCAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGCTGCAGGGAAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGTCCCGAGACCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGTGCCGCTGG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -GGGCTCCTCCTCGCCCTCTTGCCCCCGGGAGCCGCGAGC
```

3777 CGGAAGTACACGATGCGGAACTGCTGCAGGAAACGGAGCTGGTGGAGCCGCTGACACCT 3836 329		329 329 3717 CTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGGCAGCAGAAGATC 3776	3657 CCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGGTGGGT	329 329	3597 TGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGATGACAAGGGCTGC 3656	329 329	GGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGATGAGGAGGGCGCA		CAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCTTCTGCGTGGCCCGCTGCCCCAGC	329 329	TGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGACCGGAGGCTGAC		GAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGGCACTGTTTGCCG		CCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAGGAGTGCGTGGAG		GAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGGCACTGCTGCTGGGG		3177 GACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAACCGGCCAGAGGAC 3236	AGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCACACGGTGCCCTGG	329 329	3057 CTGACCCTGCAAGGGCTGGGCATCAGCTGGGCTGCGCTCACTGAGGGAACTGGGC 3116		2997 AGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAATGGCGCCTACTCG 3056	329 329	2937 CTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGCCTGCCT	329	GGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAGAGCAGCTCCAAGTGTTTGAGACT	70000000000000000000000000000000000000		GAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGGCCTGGCATTTCTGCCGGAGAGACTTTTGAT		329 329 2757 TATGGTCTGGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGTGCCAATATCCAG 2816
		· ·		:		•																	şî i	.:				-					
. <del></del>	<b>0</b> 0	da 42		, ,	, b	Qy .		Qy		Qy		VΩ	. Db	Ωу	da	Qy	da	Qy	da	νο	dd .	 Qy	Db	γ <sub>Q</sub>	dg .'	0 <sub>V</sub>	Db	Qу	dd Db	γQ	Db	γQ	מס
Qy 355	Qy 335 Db 4857	4	DD 4/3/		4		4	у 329	Db 4557	)y 329	4	ly 329	b 4437	ly 329	b 4377	у 329	b 4317	у 329	b 4257		4	у 329	b 4137		4		b 4017	у 329	b 3957	у 329	b 3897	у 329	ъ 3837
LeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSerGluGlyAlaGly	5 ValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAspLeuThrLeuGly 	TATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGCGCCTTGGGGGCATG	ACCITICIACCGCTCACTGCTGGAGGACGATGACATGGGGGACCT		/ CCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG		7 TCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGCATGGCCAGGGAC		7 CAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGTTGGATGATTGAC		7 TACGATGGGATCCCAGCCCGGGAĠATCCCTGACCTGCTGGAAAAGGGGGGAGCGGCTGCCC		AGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTTGGGGCCAAACCT		AAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGGTTCACCCACC		7 GACTTCGGGCTGGCTGGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGC		7 CACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACA		7 CTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTA		7 TATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGACGCCTGGGCTCCCAGGACCTG		7 TOCOGCOTTOTGGGCATOTGCCTGACATOCACGGTGCAGCTGGTGACACAGCTTATGCCC	:	7 GCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGCTCCCCATATGTC	, , , , , , , , , , , , , , , , , , , ,	7 GGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAACACATCCCCCAAA		7 GTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATCTGGATCCCTGAT	)	AGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACGGAGCTGAGGAAG

δ

```
Sequence 1, Application US/09811115

PAtent No. US20020035736A1

GENERAL INFORMATION:
APPLICANT: Erickson, Sharon
APPLICANT: Schwall, Ralph
APPLICANT: King, Kathleen
TITLE OF INVENTION: HER-2 TRANSGENIC NON-HUMAN TUMOR MODEL
FILE REFERENCE: GENEMY.034A
CURRENT FILING DATE: 2001-03-16
PRIOR APPLICATION NUMBER: 05/09/811,115
CURRENT FILING DATE: 2000-03-16
PRIOR FILING DATE: 2000-03-16
PRIOR FILING DATE: 2000-03-16
PRIOR FILING DATE: 2000-03-16
 Alignment Scores: Pred. No.: Score:
                                                            ; FEATURE:
; OTHER INFORMATION: Vector Sequence
US-09-811-115-1
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                   -09-811-115-1
                                                                                                                                                                      SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                     20 ID NO 1
LENGTH: 9274
TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4917
                                                                                                                                                                                                                                                                                                                                                                                                                              5562 AGCTATTCCAGAAGTAGT 5579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5217 GCTGGTGCCACTCTGGAAAGGGCCAAGACTCTCTCCCCAGGGAAGAATGGGGGTCGTCAAA 5276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         495
                                                                                                                                                                                                                                                                                                                                                                                                                                                            575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    475 AspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGly 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProAspValArgProGlnProProSerProArgGluGlyProLeuProAlaAlaArgPro 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AlaAlaProGlnProHisProProProAlaPheSerProAlaPheAspAsnLeuTyrTyr 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AlaGlyAlaThrLeuGluArgAlaLySThrLeuSerProGlyLysAsnGlyValValLys 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeuPro 394
                                                                                                                                                                                                                                                                                                                                                                                                                                               AsnLeuSerArgAspThr 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTCCGCAG---AAGCCCTGATGTGTCCTCAGG-----GAGCAGGGAAGGCGGCCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGACCAGGACCCACCAGAGCGGGGGCTCCACCCCAGCACCTTCAAAGGGACACCTACG 5456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGlyThrProThr 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCGAGTACTTGACACCCCAGGGAGGA 5336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SerProSerThrGlnProTrpGluHisValAsnAlaIleGlnGluAlaArgArgLeuLeu 574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCTGCAAAGCCTCCCC 5036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGAGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTGGCACCCTCCGAAGGGGCTGGC 4976
 3.81e-200
2422.00
Length: Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -GTGTGAACCAGAAGGCCA 5510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41.12%
40.43%
64.78%
```

TGTCCCTACA	CCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGTGACTGCC yrLeuSerThrAspValGlySer
lThrAlaCysProTyrAs	302 ProAsnProGluGlyArgTyrThrPheGlyAlaSerCysVa
hrAspThrPheGluSerMet	282 IleCysGluLeuHisCysProAlaLeuValThrTyrAsnT
LeuHisPheAsnHisSerGly            CTCCACTTCAACCACAGTGGC	262 G1yCysThrG1yProLysHisSerAspCysLeuAlaCys 
CysHisGluGlnCysAlaAla 	242 GlyCysAlaArgCysLysGlyProLeuProThrAspCys
ThrargThrValCysAlaGly                  ACGCGCACTGTCTGTGCCGGT	222 ArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuT
SerProMetCysLysGlySer 	202 LeuileaspthrasnargSerargalaCysHisProCys 
3AsnAsnGlnLeuAlaLeuThr              3AACAACCAGCTGGCTCTCACA	182 TyrGlnAspThrIleLeuTrpLysAspIlePheHisLys 
eGlnArgAsnProGlnLeuCys 	162 ArgSerLeuThrGluIleLeuLysGlyGlyValLeuIl 
yGlyLeuArgGluLeuGlnLeu 	142 LeuAsnAsnThrThrProValThrGlyAlaSerProGl 
.aValLeuAspAsnGlyAspPro 	122 ArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAl 
COLEUG1nArgLeuArgIleVal	102 TyrvalleulleAlaHisAsnGlnValArgGlnValPr ,
lnAspIleGlnGluValGlnGly 	82 ThrTyrLeuProThrAsnAlaSerLeuSerPheLeuG] 
.lValGlnGlyAsnLeuGluLeu 	62 LeuaspMetLeuArgHisLeuTyrGlnGlyCysGlnVa 
CCCTGCCAGTCCCGAGACCCAC	42 ThrGlnValCysThrGlyThrAspMetLysLeuArgLev 
luLeuAlaArgGlyAlaAlaSer                    TCTTGCCCCCCGGAGCCGCGAGC	22 LeuPhePheTrpLeuAspArgSerValLeuAlaLysGl
uSerLeuGlyPheLeuPheLeu           GGAGCTGGCGGCC	2 ArgAlaAlaProLeuLeuLeuAlaArgAlaAlaSerLe
4)	9-821-883-2 (1-690) x US-09-811-115-1 (1-927
ive: 9 s: 31	ent Similarity: 41.12% Conservat Local Similarity: 40.43% Mismatche 64.78% Indels: 10 Gaps:

₽

	_	3/1/ CTGGTGGTGGTGTGTGTTTTGGGATCCTCATCAAGCGACGGCAGCAGAAGATC 3//6
Db 4797 TATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGCGCTGGGGGCATG 4856		
Qy 330GlyAlaGlyGlyMet 334	<u> </u>	
Db 4737 ACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTGGATGCTGAGGAG 4796	· ·	ひにくによる ひとも はんじん しんしん しんしん しんしん マン・カン マン・カイン ひと
Qy 329 329		329 329
CCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG		3597 TGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGATGACAAGGGCTGC 3656
329		329 329
101/ ICIONNITO POROCCUMONI ICONORDA FIROTO ACTORNI ACT		3537 GGTGTGAAACCTGACCTCTCCTACATGCCCCATCTGGAAGTTTCCAGATGAGGAGGGGCGCA 3596
15.17 TOTICAATIOTICAGO A CATTURO CONTROLO TOTICA A CONTROLO A CONT		329 329
329		3477 CAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCTTCTGCGTGGCCCGCTGCCCCAGC 3536
A 5.5.7 CAGCCCCCATCCTCCACCATTGATGTCTCTACATGATGATGATGATGATGATGATGATTGAC		329 329
Qy 329 329		3417 TGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTTGGACCGGAGGCTGAC 3476
Db 4497 TACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAAGGGGGAGCGGCTGCCC 4556		
Qy 329 329		
Db 4437 AGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTTTGGGGCCAAACCT 4496		GAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGGCACTGTTTGCCG
Оу 329 329		329 329
ANGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGGTTCACCCACC		3297 CCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGGCCAGGAGTGCGTGGAG 3356
		329 329
320		3237 GAGTGTGTGGGCGAGGGCCTGCCCACCAGCTGTGCGCCCCGAGGGCACTGCTGGGGT 3296
Db 4317 GACTTCGGGCTGGCTCGGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGC 4376		329
Оу 329 329		01100110010111001111001111001110011001
Db 4257 CACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACA 4316		しなひひな むなししひむししなな ししひねしなしなしかしなんしなく せいしな ひらしししなせびじ ムルル・ロージ とししない しゅうしゅうしゅう しゅうしゅう しゅん しゅんり しゅん しゅん しゅんり しゅん しゅんり しゅんり しゅん
Qy 329		329 329
CTGAACTGGTGTATGCAGATTGCCAAAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTA		3117 AGTGGACTGGCCCTCATCCACCATAACACCCACCTCTGCTTCGTGCACACGGTGCCCTGG 3176
29		329 329
		3057 CTGACCCTGCAAGGGCTGGGCATCAGCTGGGGTGGGGCTGCGCTCACTGAGGGAACTGGGC 3116
ひようしんごひゃくしんしんじじょうしょうしょうしょく マジンこうしゅうはく アンドンはく ひんもん たんしんじん はんしん ひとんしん はんしん しんしんしん しんしん しんしん しんしん しんしん しんし		329 329
300		2997 AGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAATGGCGCCCTACTCG 3056
Db 4077 TCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACACAGCTTATGCCC 4136		329
у 329 329	. Qy	CIBBANBABAICACABBITACCIATACATCICABCATBBCCBBACABCCTBCCTBACCTC
Db 4017 GCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGCTCCCCATATGTC 4076		
у 329 329	Qy	111111111111111111111111111111111111111
Db 3957 GGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAACACATCCCCCAAA 4016		2877 GGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAGAGCAGCTCCAAGTGTTTGAGACT 2936
y 329 329	Qy	329 329
Db 3897 GTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATCTGGATCCCTGAT 3956		2817 GAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCGGAGAGCTTTGAT 2876
329	Qy	329 329
		2757 TATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGTGCCAATATCCAG 2816
3837 AGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACGGAGCTGAGGAAG		329 329
329		2697 ACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGTGCCCGAGTGTGC 2756
b 3777 CGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAGCCGCTGACACCT 3836	Db	329 329
у 329 329	Qy	1 11-11-11-11-11-11-11-11-11-11-11-11-11
	_	2637 TACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTTCTCCTCCTCCTCACAACCAAC

Q 망 Ş B Q 밁

밁 δδ

```
Sequence 5, Application US/09441411
Publication No. US20030008342A1
GENERAL INFORMATION:
APPLICANT: Scholler, Nathalie B.
APPLICANT: Disis, Mary L.
APPLICANT: Helistrom, Ingegerd
APPLICANT: Helistrom, Karl Erik
TITLE OF INVENTION: SURFACE RECEPTOR ANTIGEN
FILE REFERENCE: 73003.409
CURRENT APPLICATION NUMBER: US/09/441,411
CURRENT FILING DATE: 1999-11-16
NUMBER OF SEQ ID NOS: 26
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
LENGTH: 4473
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                    5337
                                                                                                                                                                                                                                                    5562
                                                                                                                                                                                                                                                                                                                                                  5457
                                                                                                                                                                                                                                                                                                                                                                                                   5397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4857
                                       ID NO 5
                                                                                                                                                                                                                                                                            575
                                                                                                                                                                                                                                                                                                                           555
                                                                                                                                                                                                                                                                                                                                                                           535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         435
                                                                                                                                                                                                                                                                                                                                                                                                                           515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          335
                                                                                                                                                                                                                                                   AGCTATTCCAGAAGTAGT 5579
                                                                                                                                                                                                                                                                                                                                                 AlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLySAsnGlyValValLys 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGlyThrProThr 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AlaAlaProGlnProHisProProProAlaPheSerProAlaPheAspAsnLeuTyrTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGly 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeuPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGGACCTGACACTAGGG
                                                                                                                                                                                                                                                                         AsnLeuSerArgAspThr
                                                                                                                                                                                                                                                                                                  AGTCCGCAG----AAGCCCTGATGTGTCCTCAGG-----GAGCAGGGAAGGCGGCCTCTG
                                                                                                                                                                                                                                                                                                              SerProSerThrG1nProTrpG1uHisValAsnAlaIleG1nG1uAlaArgArgLeuLeu
                                                                                                                                                                                                                                                                                                                                                                                                 TGGGACCAGGACCCAGAGCGGGGGGCTCCACCCAGCACCTTCAAAGGGACACCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGCCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGACAACCTCTATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCGAGTACTTGACACCCCAGGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGGAGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTGGCACCCTCCGAAGGGGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSerGluGlyAlaGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ValHisHisArgHisArgSerSerSerThrArgSerGlyGlyAlyAspLeuThrLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCTGCAAAGCCTCCCC
                                                                                                                ANTIGEN
                                                                                                                VACCINES
                                                                                                                                                                                                                                                                                                  5561
                                                                                                                                                                                                                                                                                                                          574
                                                                                                                                                                                                                                                                                                                                                 5510
                                                                                                                                                                                                                                                                                                                                                                                                                                                  5396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5096
                                                                                                                                                                                                                                                                                                                                                                          554
                                                                                                                                                                                                                                                                                                                                                                                                 5456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         354
```

```
맑
              Š
                               밁
                                            δÃ
                                                               밁
                                                                            δ
                                                                                              멍
                                                                                                           Ş
                                                                                                                             밁
                                                                                                                                           Ş
                                                                                                                                                            밁
                                                                                                                                                                         20
                                                                                                                                                                                            밁
                                                                                                                                                                                                         ρ
                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                    . 2
                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-821-883-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment
Pred. No.:
 1009
                               949
                                                               688
                                                                                               829
                298
                                                                                                                              769
                                                                                                                                                                            198
                                                                                                                                                                                            649
                                                                                                                                                                                                            178
                                                                                                                                                                                                                           589
                                                                                                                                                                                                                                                                                         469
                                                278
                                                                               258
                                                                                                              238
                                                                                                                                              218
                                                                                                                                                             709
                                                                                                                                                                                                                                          158
                                                                                                                                                                                                                                                           529
                                                                                                                                                                                                                                                                                                         118
                                                                                                                                                                                                                                                                                                                        409
                                                                                                                                                                                                                                                                                                                                                       349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118
                                                                                                                                                                                                                                                                          138
                                                                                                                                                                                                                                                                                                                                                                                      289
                                                                                                                                                                                                                                                                                                                                                                                                                     229
                                                                                                                                                                                                                                                                                                                                                                                                                                                    178
                                                                                                                                                                                                                                                                                                                                       98
                                                                                                                                                                                                                                                                                                                                                                                                     58
                                                                                                                                                                                                                                                                                                                                                                      78
                                                                                                                                                                                                                                                                                                                                                                                                                                    38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N
PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla
                                                                                              CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr
                                                                                                                                                                    LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet
                                                                                                                                                                                                                                                         ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln
                                                                                                                                                                                                                                                                                                                        GAGGTGCAGGGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCACTGCAGAGG
                                                                                                                                                                                                                                                                                                                               GluValGlnGlyTyrValLeuILeAlaHiSASnGlnValArgGlnValProLeuGlnArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTAAGGGCTCCCGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGCCTGACGCGCACT
                                                                                                                                                             CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATG
                                                                                                                                                                                            CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAG
                                                                                                                                                                                                                                                                                                                                                        AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln
                                                                                                                                                                                                                                                                                                                                                                                      CCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGGTGCAGGGA
                                                                                                                                                                                                                                                                                                                                                                                              ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCTGGCGGCCTTGTGCCGCTGG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ArgAlaAlaProLeuLeuAlaArgAla-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (1-690)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.44e-200
2418.00
41.06%
40.67%
64.67%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-441-411-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (1-4473)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    -GGGCTCCTCCTCGCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AlaSerLeuSerLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4473
523
5
736
 1068
                                                                                                                                                                                                                                                                                                         137
                                1008
                                                                                                                                                                                                                                          177
                                                                                                                                                                                                                                                                         157
                                                                                                                                                                                                                                                                                                                                       117
                                                                                                                                                                                                                                                                                                                                                                                                                     288
                                                297
                                                               948
                                                                               277
                                                                                               888
                                                                                                              257
                                                                                                                              828
                                                                                                                                             237
                                                                                                                                                                            217
                                                                                                                                                                                                            197
                                                                                                                                                                                                                          648
                                                                                                                                                                                                                                                          588
                                                                                                                                                                                                                                                                                         528
                                                                                                                                                                                                                                                                                                                        468
                                                                                                                                                                                                                                                                                                                                                       408
                                                                                                                                                                                                                                                                                                                                                                      97
                                                                                                                                                                                                                                                                                                                                                                                      348
                                                                                                                                                                                                                                                                                                                                                                                                     77
                                                                                                                                                                                                                                                                                                                                                                                                                                    57
                                                                                                                                                                                                                                                                                                                                                                                                                                                   228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   177
```

Qy 330Gly 330	_	
Db 3169 CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTG 3228	_	2089 GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCATCTCTGCGGTG 2148
		329 329
ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG		GAGGAGGGCGCATGCCAGCCTTGCCCCCATCAACTGCACCCCACTCCTGTGTGGACCTGGAT
Qy 329 329		329 329
3049 TGGATGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC		1969 CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGAT 2028
W W		329 329
2303 PURCHANTANIAN TANIAN TANI		1909 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCCTCCCT
		329 329
220		1849 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1908
. 2929 GGGGCCAAACCTTACGATGGGATCCCAGCCGGGAGATCCCCTGACCTGCTGGAAAAGGGG		329 329
Qy 329 329		1789 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG 1848
Db 2869 TTCACCCACCAGAGTGATGTGTGGGAGTTATGGTGTGACTGTGTGGGGAGCTGATGACTTTT 2928		
Qy 329 329 .		רעה זמר ז מממם זר העומם מהריבעה רבעה ז מזר בעה ז מרע מרבעה ז ברנוז רם ממחרר עה
Db 2809 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 2868		これではいっているとは、これでは、これでは、これでは、これでは、これでは、これでは、これでは、これで
Qy 329 329 .		
Db 2749 GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT 2808		CGGCCAGAGGACCAGTGTGTGTGGGCGACGGCGTGTCTGCCACCAGTGTGTGCGCCGCGCGACGG
Oy 329 329		
Db 2689 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 2748		1609 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1668
		329 329
2629 TCCCAGGACCTGCTGAACTGGTGTATGCCAAAGGGGATGAGCTACCTGGAGGAT		1549 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCACC
		329 329
Oy 329 329.		1489 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG
Db 2569 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGACGCCTGGGC 2628	· .	
Qy 329 329		
Db 2509 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2568		TRACTTGACTTCATCTTCTTCTAGAACTTCAGACTTGAGTTGAGTCTCCCGCGCACTTCTTCTCTCTC
Qy 329 329 -		
Db 2449 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 2508		GTGTTTGAGACTCTGGAAGACTCACACTTAGCTTATACTTCAGCTTGGGAGAGACTCGGGACACC
Qy 329 329		
Db 2389 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2448		1309 GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG
Оу 329 329 .		
Db 2329 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCCTTTTGGCACAGTCTACAAGGGCATC 2388		1249 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 1308
у 329 329	Qy	
Db 2269 CCGCTGACACCTAGCGGAGCGATGCCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2328		GCCCGAGTGTGCTATGGTCTGGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT
y 329 329	Оу	
Db 2209 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2268		AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT
y 329 329	Qy	329 329
GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTCTTTGGGATCCTCATCAAGCGACGG		
y 329 329		318 CysProTyrAsnTyrLeuSerThrAspValGlySer 329
	•	

sapiens

```
APPLICANT: Sharon Erickson
APPLICANT: Mark Sliwkowski
APPLICANT: Mark Sliwkowski
TITLE OF INVENTION: METHODS OF TREATMENT USING ANTI-ErbB
TITLE OF INVENTION: ANTIBODY-MAYTANSINOID CONJUGATES
FILE REFERENCE: GENENT.073A2
CURRENT APPLICATION NUMBER: US/09/811,123
CURRENT FILLING DATE: 2001-03-16
PRIOR APPLICATION NUMBER: 60/238,327
PRIOR APPLICATION NUMBER: 60/238,327
PRIOR APPLICATION NUMBER: 09/602,530
PRIOR FILING DATE: 2000-06-23
PRIOR FILING DATE: 2000-06-23
PRIOR FILING DATE: 2000-06-23
PRIOR FILING DATE: 2000-06-23
                                                                                                                                                                                          RESULT
US-09-6
                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                      ő
                                                                                                                                                                                                                                                                                            Вр
                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                          Sequence 8, Application US/09811123
Patent No. US20020001587A1
GENERAL INFORMATION:
SOFTWARE: FASTSEQ for
SEQ ID NO 8
LENGTH: 3768
TYPE: DNA
                                                                                                                                                                                                                                                                                              3829
                                                                                                                                                                                                                                                                                                                                  3769
                                                                                                                                                                                                                                                                                                                                                                       3709
                                                                                                                                                                                                                                                                                                                                                                                                          3649
                                                                                                                                                                                                                                                                                                                                                                                                                                                3589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3289
                                                                                                                                                                                                                                                                                                                                                                                         471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                431
                                                                                                                                                                                                                                                                           531
                                                                                                                                                                                                                                                                                                                 511
                                                                                                                                                                                                                                                                                                                                                    491
                                                                                                                                                                                                                                                                                                                                                                                                                            451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       331
                                                                                                                                                                                                                                                                                                                                                                    GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr
                                                                                                                                                                                                                   AlaArgSerProSerPro
||| |||||||||
ACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                              TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAAGCCTCCCCACACATGACCCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA-----GTGTGA 3942
                                                                                                                                                                                                                                                                                           ASDLEUTYTTYTTPASPG1DASPPTOPTOG1UATGG1YA18PTOPTOSETTHTPHELYS
                                                                                                                                                                                                                                                                                                                                                                                                         GCTGCCCGACCTGCTGCCACTCTGGAAAGGCCCCAAGACTCTCTCCCCCAGGGAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                  AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerProGlyLySASn
                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCCGAGAGGGCCCCTCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlnSerLeuProThrH1sAspProSerProLeuGlnArgTyrSerGluAspProThrVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaGlyGlyMetValH1sH1sArgH1sArgSerSerSerThrArgSerGlyGlyGlyAsp 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC
                          Windows Version
                            4.0
                                                                                                                                                                                                                                                                                                                                                                                        490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          410
                                                                                                                                                                                                                                                                                             3888
                                                                                                                                                                                                                                                                                                                                3828
                                                                                                                                                                                                                                                                                                                                                  510
                                                                                                                                                                                                                                                                                                                                                                     3768
                                                                                                                                                                                                                                                                                                                                                                                                         3708
                                                                                                                                                                                                                                                                                                                                                                                                                           470
                                                                                                                                                                                                                                                                                                                                                                                                                                              3648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3288
                                                                                                                                                                                                                                                                           550
                        õ
                                       B
                                                            δÃ
        밁
                                                                                В
                                                                                                 Š
                                                                                                                     В
                                                                                                                                     δ
                                                                                                                                                           밁
                                                                                                                                                                         Qy
                                                                                                                                                                                               В
                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                         ő
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: HOMO US-09-811-123-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               No.:
                          315
                                             826
                                                                                                                                                            646
                                                                                                                                                                                                                                     526
                                                                                                                                                                                                                                                                          466
                                                                                                                                                                                                                                                                                                               406
                                                                                                                                                                                                                                                                                                                                                                     135
                                                               295
                                                                                  766
                                                                                                                       706
                                                                                                                                                                                                586
                                                                                                                                                                                                                                                        195
                                                                                                                                                                                                                                                                                            175
                                                                                                                                                                                                                                                                                                                                155
                                                                                                                                                                                                                                                                                                                                                   346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106
                                                                                                     275
                                                                                                                                         255
                                                                                                                                                                             235
                                                                                                                                                                                                                  215
                                                                                                                                                                                                                                                                                                                                                                                        286
                                                                                                                                                                                                                                                                                                                                                                                                        115
                                                                                                                                                                                                                                                                                                                                                                                                                           226
                                                                                                                                                                                                                                                                                                                                                                                                                                             95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35
```

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-821-883-2 (1-690) x US-09-811-123-8 (1-3768)
                                                                                                                                                                                                                                                                                                                              ThrAspThrPheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCys
                                                                        LeuHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsn
                                                                                                                               GlyLeuArgGluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIle
                                                                                                                                                                                                                                                                                               TGCCATGAGCAGTGTGCTGCCGGCTGCACGGGCCCCAAGCACTCTGACTGCCTGGCCTGC
                                                                                                         CysHisGluGlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCys
                                                                                                                                                               Scores
                                                                 CTCCACTTCAACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAAC
                                                                                                                                                                                                                                                              GGCCTGCGGGAGCTGCAGCTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATC
                                ACAGACACGTTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGCCCCCCGGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.25e-199
2410.50
41.168
41.168
64.478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3768
510
0
727
                                                                                                                                                                               234
                                                                                                                                                                                                                                                                                                                                                                                                                                             74
                                                                                                                                                                                                                                          194
                                                                                                                                                                                                                214
                                                                                                                                                                                                                                525
945
                329
                                885
                                               314
                                                                 825
                                                                                294
                                                                                                765
                                                                                                                274
                                                                                                                                 705
                                                                                                                                                254
                                                                                                                                                               645
                                                                                                                                                                                                585
                                                                                                                                                                                                                                                                465
                                                                                                                                                                                                                                                                               174
                                                                                                                                                                                                                                                                                                405
                                                                                                                                                                                                                                                                                                               154
                                                                                                                                                                                                                                                                                                                              345
                                                                                                                                                                                                                                                                                                                                              134
                                                                                                                                                                                                                                                                                                                                                              285
                                                                                                                                                                                                                                                                                                                                                                             114
                                                                                                                                                                                                                                                                                                                                                                                              225
                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                                                                                                                                                                                               105
```

330GlyAlaGlyGlyMetValHisHisArgHisArgSerSerSerSerThrArgSerGly 347	Qy	329 329
3046 GACCTGGTGGATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCT 3105	дъ	TCTGCGGTGGTTGGCATTCTGCTGGTCGTCGTGGTGGTGGTGGTCTTTGGGATCCTCATC
329 329	Qy	
2986 CCAGCCAGTCCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGG 3045	dd	GACCTGGATGACAAGGGCTGCCCCGCCGAGCAGAGAGCCAGCC
329 329	Qy	
2926 TTCTCCCGCATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGC 2985	Db	TTTCCAGATGAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTG
329 329	Qy	329 329
GTCAAATGTTGGATGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAA	Db	TGCGTGGCCCGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCCATCTGGAAG
329 329	Qy	
2806 GAAAAGGGGGAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATG 2865	рь	TGTTTTGGACCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTÀTAAGGACCCTCCCTTC
329 329	Qy	
2746 ATGACTTTTGGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTG 2805	Db	AATGCCAGGCACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACC
329 329	Qy	
2686 CGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTG 2745	рь	CGGGGCCAGGAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTG
329 329	Qy	
2626 GAGTACCATGCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTC 2685	Db	1546 GCCCGAGGGCACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTT 1605
329	Qy	329 329
CCCAACCATGTCAAAATTACAGACTTCGGGCTGGCTGGCT	ada da	1486 ACTGCCAACCGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGC 1545
		329 329
	) )	1426 TTCGTGCACACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCAC 1485
かいて ひんてんようじゅうしん マジン・シング・シング・シング・シング・カング・カング・カング・カング・カング・カング・カング・カング・カング・カ	· .	329 329
		1366 CGCTCACTGAGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGC 1425
2446 CGCCTGGGCTCCCAGGACCTGCTGAACTGGTGTATGCCAAGTTGCCAAGGGGATGAGCTAC 2505	Db	329
329 329	Оу	CTUCACAATUUCUCCTACTCUCCTGCAAUGUCTUGGCATCAGCTUGGCTUG
2386 CTGGTGACACAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGA 2445	מם	
329 329	Qy	ער המטרים שר היו מטרה זי רושה מזרי זי רושה מירי ז הרשמ של היו מרטומים ועוזי רו המסתים היו מירי ז מרטומים היו מירי
2326 GGTGTGGGCTCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAG 2385	ρb	
329 329	Оу	ע מייני די רי מיימיר די די מימיר די רי מימיר מיימים דו שר רי די די איימיר דר מייני דר מיימים בדי מייני מיימים ב
2266 AGGGAAAACACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCT 2325	рь	ついて こうさい こうさい こうさい こうさい こうさい こうさい こうさい こうさい
329 329	Qy	
2206 AAGGGCATCTGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTG 2265	. Db	ひなひなしようななしなんしないというできょうなんしょうしょうしょうしょうしょうしゃ はいしょうない はいしょう はいしょう はいしょう はんしょう しゅうしょう しゅうしょう はんしょう しゅうしょう しゅうしゃく しゅんりん しゅうしゃく しゅんしゃく しゅんしゃく しゅんりん しゃくりん しゃんりん しゃくりん しゃくりん しゃんしん しゃんりんしん しゃんりん しゃんしん しゃんしん しゃんりんしん しゃんりんしん しゃんりん しゃんしゃんりん しゃんりん しゃんりんしん しゃんり
329 329	· Qy	
2146 AAAGAGACGGAGCTGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTAC 2205	Db	GTTACCAGTGCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCA
329 329	Оу	
2086 CTGGTGGAGCCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTG 2145	Db	AAGCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCA
329 329	Qy	
2026 AAGCGACGGCAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAG 2085	Db	946 CCCCTGCACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGC 1005
	_	329 329

B 64 B

Ş

8 da da

```
Query
DB:
                                                                                                                                     ; TYPE: DNA ; ORGANISM: Homo sapiens US-09-811-115-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
  US-09-821-883-2
                                       Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                             Pred. No.:
                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                               US-09-811-115-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/09811115 Patent No. US20020035736A1 GENERAL INFORMATION:
                                                                                                                                                                            SEQ ID NO 2
LENGTH: 3768
                                                                                                                                                                                                                          APPLICANT: Erickson, Sharon
APPLICANT: Schwall, Ralph
APPLICANT: Schwall, Ralph
APPLICANT: King, Kathleen
TITLE OF INVENTION: HER-2 TRANSGENIC NON-HUMAN TUMOR MODEL
FILE REFERENCE: GENENT. 034A
CURRENT FALLING DATE: 2001-03-16
PRIOR APPLICATION NUMBER: 60/189,844
PRIOR APPLICATION NUMBER: 60/189,844
PRIOR FILING DATE: 2000-03-16
                                                                                                                                                                                                     NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
                                                                                                                                                                                                                                                                                                                                                                                                                                       3706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   348 GlyGlyAspLeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             368
                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaPheAspAsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSer 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyLysAsnGlyValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGlu 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCCTGAATATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCCGAGAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlnProGluTyrValAsnGlnProAspValArgProGlnProProSerProArgGluGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProThrValProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerPro 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LysGlyLeuGlnSerLeuProThrH1sAspProSerProLeuGlnArgTyrSerGluAsp 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlaProSerGluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTCTGCCTGCCCGACCTGCTGGTGCCACTCTGGAAAGGGCCAAGACTCTCTCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCACCCTCCGAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCCCGGGCGCTGGGGGCATGGTCCACCACCACCACCACCACCTCATCTACCAGGAGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGAAGAATGGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGGGGACCTGACACTAGGGCTGGAGGCCCTCTGAAGAGGAGGCCCCCCAGGTCTCCACTG
(1-690) x US-09-811-115-2 (1-3768)
                                                                                                                                                                                                        for Windows Version 4.0
                           1.25e-199
2410.50
41.16%
41.16%
64.47%
                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
                                     0
2
727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               367
```

125	GAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCA	1066	DЬ
29		329	Qy
065	GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCA 1	1006	ф
29	3	329	Ωу
005	CACAACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGC 1	946	В
29	3	329	Qy
5	TGACTGCCTGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACC	886	Ъ
29	ThrAlaCysProTyrAsnTyrLeuSerThrAs	315	δδ
85	CGGTATACATTCGGCGC	826	Db
14	hrAspThrPheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCy	295	δδ
25	TGCCCAGCCCTGGTC	766	DЪ
94	euHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyr	275	Qy
65	GCCATGAGCAGTGTGCTGCCGGCTGCACGGGCCCCCAAGCACTCTGACTGCCTGGCCTGC 7	706	Вb
7	HisGluGlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCys 2	255	Qγ
. 05	ACGCGCACTGTCTGTGCCGGTGGCTGTGCCCGCTGCAAGGGGCCACTGCCCACTGACTG	646	д
54	hrargThrValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCy	235	Qy
5.	TCTCCGATGTGTAAGGGCTCCCGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGCCTG	586	Ď.
.4	erProMetCysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLe	215	Qy
85	AACAACCAGCTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGGCCTGCCACCCCTGT	526	밁
14	nAsnGlnLeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCy	195	Qy
25	CAGCGGAACCCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCÇACAAG 5		Ф
94	lnArgAsnProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLy	175	Qy
65	GGCCTGCGGGAGCTGCAGAGAGCCTCACAGAGATCTTGAAAGGAGGGGTCTGATAC 4	406	Вþ
74	lyLeuArgGluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIl	155	Qy
05	CCTGTCACAGGGGCCTCCCCAGGA	346	<b>D</b> .
54	alLeuAspAsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGl	135	Qγ
45	CTGCAGAGGCTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTAŢGCCÇTGGCC	286	В
ω - <b>Α</b> -	euGlnArgLeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAl	115	Qy
.85	CATCGCTCACAACCAAGTGAGGCAGGTCCCA	226	망
14	spIleGlnGluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValPr	95	Qγ
25	GTGCAGGGAAACCTGGAACTCACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCT	166	В
<b>4</b> .	alGlnGlyAsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGl	75	Qy
65	CCTGCCAGTCCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTG 1	106	밁
4	roAlaSerProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnVa	55	Qy
	GCCCCCGGAGCCGCGAGCCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTC		문 5
4	GlvAlaAlaSerThrGlnValCvsThrGlvThrAspMetLvsLeuArgLe	ω 5	Q

	329 329	2086 CTGGTGGAGCCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTG 2145		329 329 2026 AAGCGACGGCAGAAGATCCGGAAGATACACGATGCGGAGACTGCTGCAGGAAACGGAG 2085	TCTGCGGTGGTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATC	329 329	1906 GACCTGGATGACAAGGGCTGCCCCGCCGAGCAGAGAGCCAGCC		TTTCCAGATGAGGAGGCCCATGCCAGCCTTGCCCCATCAACTGCACCCCACTCCTGTGTG	1786 TGCGTGGCCCGCTGCCCCAGCGGTGTGAAACCTGACCTCCTACATGCCCATCTGGAAG 1845		1726 TGTTTTGGACCGGAGGCTGACCAGTGTGTGGCCCTGTGCCCACTATAAGGACCCTCCCT	329 329	1666 AATGCCAGGCACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCCAGAATGGCTCAGTGACC 1725	329 329	CGGGGCCAGGAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTG		GCCCGAGGGCACTGCTGGGGTCCAGGGCCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTT		1486 ACTGCCAACCGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTAGCCACCAGCTGTGC 1545		1426 THEOGRAPH PROGRAPH CONTRACTOR CONTRACTO	CGCTCACTGAGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCACC		1306 CTGCACAATGGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	329	CCGGACAGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATT		CASCICCAAGIGITIGAGACICIGGAAGAGATCACAGGITACCTATACAICICAGCAIGG		TTTCTGCCGGAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCCGCTCCAGCCAG	
Qy	Db		Qy	рь	Qy	- Qy	Db	ογ	Db	Qy	Db	Ov to	D 5	-	Qy St.	. Db	Qy	dd dd		da	Оу	. Db			Qy	da	γo	dα	Qy	da	ον	Db
y 388 LysGlyLeuGlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAsp 407	3226 GCACCCTCCGAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCC	3166	348 GlyGlyAspLeuThrLeuGlyLeuGluProSerGluGluAlaProArgSerProLeu	3106 GCCCGGGCGCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGC	330 ·GlyAlaGlyGlyMetValHisHisArgHisArgSerSerThrArgSerGly		2986 CCAGCCAGTCCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGG	у 329 329	2926 TTCTCCCGCATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGC 2985	у 329 329	2866 GTCAAATGTTGGATGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAA	329	3436 (3747) 7000 7000 7000 7000 7000 7000 7000		329	2686 CGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTG 2	у 329 329	2626 GAGTACCATGCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTC	329	b 2566 CCCAACCATGTCAAAATTACAGACTTCGGGCTGGCTCGGCTGGTGGACATTGACGAGACA 2625	у 329 329	b 2506 CTGGAGGATGTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGT 2565	у 329 329	2446 CGCCTGGGCTCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTAC	329	b 2386 CTGGTGACACAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGA 2445	у 329 329 .	b 2326 GGTGTGGGCTCCCCATATGTCTCCCGGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAG 2385	у 329 329	b 2266 AGGGAAAACACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCT 2325	у 329 329	b 2206 AAGGGCATCTGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTG 2265

Allgnment Scores:		PD) of human HER-2/neu	red portion of the	OTHER INFORMATION: phosphorylation domain (PD) of human HER-2/neu  NAME/KEY. misc feature	; LOCATION: (2026)(3765) ; OTHER INFORMATION: intracellular domain (ICD) of human HER-2/neu ; NAME/KEY: misc_feature ICCATION: (3068)(3768)	ellular domain	; FEATURE: ; NAME/KEY: CDS ; LOCATION: (1)(3768) ; OTHER INFORMATION: human HER-2/new protein	9 3768 A Homo sap	APPLICATION NUMBER: U FILING DATE: 1999-01- R OF SEQ ID NOS: 26 ARE: Patentin Ver. 2.1	CURRENT APPLICATION NUMBER: US/09/854,356 CURRENT FILING DATE: 2001-05-09 PRIOR APPLICATION NUMBER: US 09/493,480 PRIOR FILING DATE: 2000-01-28	COTIXA CONTIXA CONTIXA CONTION: 1	US20020177567A1 ORMATION: Cheever, Martin A. Gheysen, Dirk	RESULT 12 US-09-854-356-9 ; Sequence 9, Application US/09854356	Qy 528 ThrPheLysGlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValPro 546	Qy 508 AlaPheAspAsnLeuTyrTyrTxpAspGlnAspProProGluArgGlyAlaProProSer 527	Qy 488 TyrLeuThrProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerPro 507	Qy 468 GlyLysAsnGlyVallValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGlu 487	Qy 448 ProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerPro 467	QY 428 GINPTOGIUTYFV81ASNGINPTOASPV81ATGPTOGINPTOPTOSETPTOATGGIUGIY 447	3346 CCCACAGTACCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCC	3286 AAGGGGCTGCAAAGCCTCCCCACACATGACCCCAGCCCTCTACAGCGGTACAGTGAGGAC
	Db 946 CCCCTGCACAACCAAGGTGACAGCAGGAGGATGGAACACAGCGGTGTGAGAAGTGCAGC 1005	Qy 329 329	Db 886 GTGACTGCCTACCAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGC 945	Oy 315 ValThrAlaCysProTyrAsnTyrLeuSerThrAspValClySer 329	Qy 295 ThraspThrPheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCys 314	Qy 275 LeuHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsn 294	Oy 255 CysHisGluGlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCys 274	Qy 235 ThrargThrValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCys 254	. Qy 215 SerProMetCysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeu 234	Qy 195 AsnAsnGlnLeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCys 214	Qy 175 GlnargasnProGlnLeuCysTyrGlnaspThrIleLeuTrpLysaspIlePheH1sLys 194	Qy 155 GlyLeuArgGluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIle 174	Oy 135 ValleuAspAsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGly 154	TID LEGISLINI GLEVALF GLEVALA EGGLYTIC GINLEDINEG LUSSPASHIY FALALEGALA IS	95 ASPILEGINGLUVALGINGLYTYVVALLEUILEALAHISASNGLUVALATGGINVALPTO	75 ValGlnGlyAsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGln		35 LeuAlaargG.lyAlaalaSeTTNTG.INVALCYSTNTGTYTITASDMECLYSLEUARGLEU	-09-821-883-2 (1-690) x US-09-854-356-9 (1-3768)	Percent Similarity: 41.08% Conservative: 0  Best Local Similarity: 41.08% Mismatches: 3  Query Match: 64.34% Indels: 727  DB: 9 Gaps: 1	o.: 3.38e-199 Length: 2405.50 Matches:

200		2
329	9	Qу 32
945	GCACCCTCGTCTGC	Db 88
329	alThrAlaCysProTyrAsnTyrLeuSerThrAspValGlySer	0у 31
314 885	rgTyrThrPheGlyAlaSerCys                   GTATACATTCGGCGCÇAGCTGT	Oy 29
N	CTCCACTTCAACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAAC	
294	LeuHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsn	
765	AGTGTGCTGCCGGCTGCACGGGCCCCAAGCACTCTGACTGCCTGGCCTGC	Db 70
274	, ysHisGluGlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCys	Оу 25
0	ACGCGCACTGTCTGTGCCGGTGGCTGTGCCCGCTGCAAGGGGCCACTGCCACTGACTG	
л	ThraraThrValCvallaGlvGlvCvaAlaAraCvaLvaGlvDroTenDroThraanCva	
234	5 SerProMetCysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeu 	Qy 21
	6 AACAACCAGCTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGT	Db 52
214	5 AsnAsnGlnLeuAlaLeuThrLeuTleAspThrAsnArgSerArgAlaCysHisProCys	Qy 19
525	6 CAGCGGAACCCCCAGCTCTGCTACCAGGACACGATTTTGTGGGAAGGACATCTTCCACAAG	Db 46
194	nArgAsnProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheH1sLys	Оу 17
465		
174	5 GlyLeuArgGluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIle	0у 15
405		ω
154	5 ValLeuAspAsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGly	0у 13
		N
134	5 LeuGlnArgLeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAla	0у 11
285		ν.
114	5 AspIleGlnGluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValPro	Qy 9
225		Db 16
94	alGlnGlyAsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGln	0у 7
165	6 CCTGCCAGTCCCGAACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTG	Db 10
74	5 ProAlaSerProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnVal	Qy 5
54 105	5 LeualaargGlyalaalaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeu 	Qy 3
-	11-883-2 (1-690) x US-09-854-356-9 (1-3768)	US-09-82
	imilarity: 41.08% Conservative: 0 1 Similarity: 41.08% Mismatches: 3 ch: 64.34% Indels: 72 Gaps: 1	er er
	: 3.38e-199 Length: 2405.50 Matches:	red

	329	329	δ
	2085	2026 AAGCGACGGCAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAG	g
	329	329	δ
	2025	1966 TCTGCGGTGGTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATC	문
	329	329	Ωy
	1965	1906 GACCTGGATGACAAGGGCTGCCCCGCCGAGCAGAGAGCCAGCC	8
	329	329	Q
	1905	1846 TTTCCAGATGAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTG	8
	329	329	Ş
	1845	1786 TGCGTGGCCCGCTGCCCCAGCGGTGTGAAACCTGACCTCCTACATGCCCATCTGGAAG	В
	329	329	Ş
	1785	1726 TGTTTTGGACCGGAGGCTGACCAGTGTGTGGCCCTGTGCCCACTATAAGGACCCTCCCT	₽
-	329	329	Ş
	1725	1666 AATGCCAGGCACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCCAGAATGGCTCAGTGACC	В
	329	329	Ş
	1665	1606 CGGGGCCAGGAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTG	8
	329	329	νQ
	1605	1546 GCCCGAGGGCACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTT	8
•	329	329	Ş
	1545	1486 ACTGCCAACCGGCCAGAGGACGAGTGTGTGGGGCGAGGGCCTGGCCTGCCACCAGCTGTGC	₽
	329	329	δ
	1485	1426 TTCGTGCACACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCAC	₽
-	329	329	Ş
	1425	1366 CGCTCACTGAGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGC	₽
	329	329	δ
	1365	1306 CTGCACAATGGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	В
	329	329	δ
	1305	1246 CCGGACAGCCTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATT	В
	329	329	δ
	1245	1186 CAGCTCCAAGTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGG	B
	329	329	Ş
	1185	1126 TTTCTGCCGGAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG	B
	329	329	ð
	1125	1066 GTTACCAGTGCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCA	В
-	329	329	ν
	1065	1006 AAGCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCA	₽
	329	329	Qγ

Qy	Db	Qy	DЬ	Qy	DЪ	Qy	Дb	Qy	Дb	Qy	, ad	Qy	Db	Qy	DЬ	Qy	рь	Qy	Db	Qy	Db	Qy	Db	Qy	Ф	Qy	Db	Qy	рь	Qy	DЬ	Qy	Db	Qy	ф
348	3106	330	3046	329	2986	329	2926	329	2866	329	2806	329	2746	329	2686	329	2626	329	2566	329	2506	329	2446	329	2386	329	2326	329	2266	329	2206	329	2146	329	2086
GlyGlyAspLeuThrLeuGlyLeuGluProSerGluGluAlaProArgSerProLeu 3	w	GlyAlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGly 3	GACCTGGTGGATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCT 3	3	CCAGCCAGTCCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGG 3	3	TTCTCCCGCATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGC 2	3	GTCAAATGTTGGATGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAA 2	3	GAAAAGGGGGAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATG 2	3	ATGACTTTTGGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTG 2	3	CGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGGGAGCTG 2	3	GAGTÀCCATGCAGÀTGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTC 2	3	CCCAACCATGTCAAAATTACAGACTTCGGGCTGGCTGGGCTGCTGGACATTGACGAGACA 2	3	CTGGAGGATGTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGT 2	3	CGCCTGGGCTCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTAC 2	3	CTGGTGACACAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGGAAAACCGCGGA 2	3	GGTGTGGGCTCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAG 2	3	AGGGAAAACACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCT 2	3	AAGGGCATCTGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTG 2	3	AAAGAGACGGAGCTGAAGGTGAAGGTGCTTGGATCTGGCGCGCTTTTGGCACAGTCTAC 2	3	CTGGTGGAGCCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTG 2
367	165	347	3105	329	3045	129	. 586	129	2925	129	865	. 29	9805 :5	129	2745	129	685	129	2625	129	565	29	2505	129	2445	29	385	29	325	29	2265	329	2205	29	2145

```
Sequence 1, Application US/09930125
Publication No. US20020193329A1
GENERAL INFORMATION:
APPLICANT: Hand Zimmerman, Susan
APPLICANT: Cheever, Martin A.
APPLICANT: Lodes, Michael D.
APPLICANT: Kalos, Michael D.
APPLICANT: Kalos, Michael D.
APPLICANT: MCNeill, Patricia D.
APPLICANT: MCNeill, Patricia D.
APPLICANT: Wedvick, Thomas S.
TITLE OF INVENTION: COMPOSITIONS AND METHDOS FOR
TITLE OF INVENTION: OF HER-2/NEU-ASSOCIATED MAI
FILE REFERENCE: 210121.544
CURRENT APPLICATION NUMBER: US/09/930,125
CURRENT FILING DATE: 2001-08-14
NUMBER OF SEQ ID NOS: 25
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1
LENGTH: 3768
 Percent Similarity:
Best Local Similarit:
Query Match:
DB:
                                                           US-09
                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                              Score:
                                     Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                              US-09-930-125-1
                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                LENGTH: 3768
TYPE: DNA
ORGANISM: Homo :
FEATURE:
                                                           NAME/KEY: CDS
LOCATION: (1)...(3765)
D9-930-125-1
                                                                                                                                                                                                                                                                                                 3646
                                                                                                                                                                                                                                                                                                                             3586
                                                                                                                                                                                                                                                                                                                                                         3526
                                                                                                                                                                                                                                                                                                                                                                                     3466
                                                                                                                                                                                                                                                                                                                                                                                                                  3406
                                                                                                                                                                                                                                                                                                                                                                                                                                               3346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3166
                                                                                                                                                                                                                                                                                                              508
                                                                                                                                                                                                                                                                                                                                          488
                                                                                                                                                                                                                                                                                                                                                                       468
                                                                                                                                                                                                                                                                                                                                                                                                   448
                                                                                                                                                                                                                                                                                                                                                                                                                                428
                                                                                                                                                                                                                                                                                                                                                                                                                                                             408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      368
                                                                                                                                                                                                                                                                                                                                                       GCCTTCGACAACCTCTATTACTGGGACCAGGGCCCACCAGAGCGGGGGGGCTCCACCCAGC
                                                                                                                                                                                                                                                                                                     AlaPheAspAsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGGGGACCTGACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCCAGGTCTCCACTG
                Similarity:
                                                                                        sapien
3.38e-199
2405.50
41.08%
41.08%
64.34%
9
Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                        FOR THE THERAPY MALIGNANCIES
3768
509
0
3
727
                                                                                                                                                               AND
                                                                                                                                                                                                                                                                    3762
                                                                                                                                                                                                                                                                                 546
                                                                                                                                                               DIAGNOSIS
                                                                                                                                                                                                                                                                                                                            3645
                                                                                                                                                                                                                                                                                                                                                        3585
                                                                                                                                                                                                                                                                                                                                                                                    3525
                                                                                                                                                                                                                                                                                                                                                                      487
                                                                                                                                                                                                                                                                                                                                                                                                  467
                                                                                                                                                                                                                                                                                                                                                                                                                 3465
                                                                                                                                                                                                                                                                                                                                                                                                                               447
                                                                                                                                                                                                                                                                                                                                                                                                                                             3405
                                                                                                                                                                                                                                                                                                                                                                                                                                                            427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     387
       S
                                δ
                                                 В
                                                              Š
                                                                               망
                                                                                          δõ
                                                                                                            밁
                                                                                                                         Ş
                                                                                                                                                      Ş
                                                                                                                                                                     밁
                                                                                                                                                                                   Ş
                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                             Ş
                      D
                                                                                                                                         뫄
                                                                                                                                                                                                  망
                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -09-821-883-2
                                                   946
                                                                                988
                                                                                              315
                                                                                                             826
                                                                                                                                          766
                                                                                                                                                       275
                                                                                                                                                                      706
                                                                                                                                                                                                  646
                                                                                                                                                                                                                 235
                                                                                                                                                                                                                                586
                                                                                                                                                                                                                                                            526
                                                                                                                                                                                                                                                                                        466
                                                                                                                                                                                                                                                                                                                     406
                                                                                                                                                                                                                                                                                                                                                346
                                                                                                                                                                                                                                                                                                                                                              135
                                                                                                                           295
                                                                                                                                                                                                                                             215
                                                                                                                                                                                                                                                                          195
                                                                                                                                                                                                                                                                                                      175
                                                                                                                                                                                                                                                                                                                                                                             286
                                                                                                                                                                                                                                                                                                                                                                                           115
                                                                                                                                                                                                                                                                                                                                                                                                         226
                                                                                                                                                                                                                                                                                                                                                                                                                                       166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   106
                                                                                                                                                                                                                                                                                                                                  155
                                                                                                                                                                                                                                                                                                                                                                                                                        95
                                                                                                                                                                                                                                                                                                                                                                                                                                                    75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 55
                                                                               CysHisGluGlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCys
                                                                                                                                                                                                           ThrArgThrValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCys
                                                                                                                                                                                                                               ValLeuAspAsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGly
                                                                                                                                                                                                                                                                                                                                                                            CCCCTGCACAACCAAGAGGTGACAGCAGGAGGATGGAACACAGCGGTGTGAGAAGTGCAGC
                       AAGCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCA
                                                                                                                                                                      TGCCATGAGCAGTGTGCTGCCGGCTGCACGGGCCCCAAGCACTCTGACTGCCTGGCCTGC
                                                                                                                                                                                                  GTGCTAGACAATGGAGACCCCGCTGAACAATACCACCCCTGTCACAGGGGCCCTCCCCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (1-690) x US-09-930-125-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (1-3768)
```

945

329

825 314 885

1065

329

294

765

274

254

194 525 214 214 585 585 174 465 154 405 134

285

345

114

74 165 94

당 4 6 8

Db 3226 GCACCCTCCGAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCC 3285		2146 AAAGAGACGGAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCCACAGTCTAC 2205
Db 3166 GGTGGGGACCTGACACTAGGGCTGGAGGCCCTCTGAAGAGGAGGCCCCCCAGGTCTCCACTG	: - : :	CTGGTGGAGCCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTG
Qy 348 GlyGlyAspLeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeu		
Db 3106 GCCCGGGCGCTGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGC		329
330		1966 TCTGCGGTGGTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATC 2025
دما		329 329
329		1906 GACCTGGATGACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCATC 1965
2986		329 329
00   329		1846 TTTCCAGATGAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCCACTCCTGTGTG 1905
329		329 329
Db 2866 GTCAAATGTTGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAA		1786 TGCGTGGCCCGCTGCCCCAGCGGTGTGAAACCTGACCTCCTCCTACATGCCCCATCTGGAAG 1845
Qy 329		
Db 2806 GAAAAGGGGGAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATG	_	TGTTTTGGACCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT
Qy 329		
Db 2746 ATGACTTTTGGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTG		ANTGCCAGGCACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACC
Оу 329		
Db 2686 CGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTG		CGGGGCCAGGAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGAGTATGTG
Qy 329 ·····		
Db 2626 GAGTACCATGCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTC		GCCCGAGGGCACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTT
Qy 329	_	
Db 2566 CCCAACCATGTCAAAATTACAGACTTCGGGCTGGCTGGCT		1486 ACTGCCAACCGGCCAGAGGACGAGTGTGTGGGCCGAGGGGCCTGGCCTGCCAGCAGCTGTGC 1545
Qy 329		329 329
Db 2506 CTGGAGGATGTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGT		TTCGTGCACACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCAC
Oy 329		
Db 2446 CGCCTGGGCTCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTAC		CGCTCACTGAGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCACC
Qy 329		329 329
N)		1306 CTGCACAATGGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG
Db 2326 GGTGTGGGCTCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAG		1246 CCGGACAGCCTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATT 1305
1		
Db 2266 AGGGAAAACACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCT		CAGCTCCAAGTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGG
Qy . 329		
Db 2206 AAGGGCATCTGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTG		TTTTCTCCCCAGAGAGATTTGATGAGAGAGAGAGAGAGAG
Qy 329		170
	-	

5 å 5

밁

B 8

망 Ş В Q Вb Qγ В δō 망 õ 망 Ş B Ş В Ş В Ş 밁 Qy 망 Q 밁 Q 밁 δ В

```
APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US/09/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEO ID NOS: 30
SOFTWARE: FASTSEQ for Windows Version 4.0
SEO ID NO 10
LENGTH: 1437
                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
DB:
          Ş
                            밁
                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Õ
                                                                  US-09-821-883-2 (1-690)
                                                                                                                                Alignment Scores:
Pred. No.:
                                                                                                                                                            US-09-821-883-10
                                                                                                                                                                                                                                                                                                                                                                   US-09-821-883-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                     Patent No. US20020061310A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                       Sequence 10, Application
                                                                                                                                                                              ORGANISM: Artificial FEATURE:
                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                             3706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3586
                                                                                                                                                                                                                                                                                                                                                                                                                                3646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3346
                                                                                                                                                                                                                                                                                                                                                                                                               528
                                                                                                                                                                                                                                                                                                                                                                                                                                                 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        388
            21
                           LeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAla
                                                                                                                                                                                                                                                                                                                                                                                          GlyLysAsnGlyValVaLLysAspValPheAlaPheGlyGlyAlaValGluAsnProGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACTTGACACCCCAGGGAGGAGCTGCCCCTCAGCCCACCCTCCTCCTGCCTTCAGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TyrLeuThrProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGAAGAATGGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGTGCCGTGGAGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTCTGCCTGCCCGACCTGCTGGTGCCACTCTGGAAAGGCCCCAAGACTCTCCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerPro
                                                                                                                                                                      HER300*rGM-CSF
                                                                 x US-09-821-883-10 (1-1437)
                                                                                    6.89e-181
2188.50
64.93%
61.74%
58.53%
                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                        US/09821883
                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                      construct
                                                                                    1437
426
22
31
211
                                                                                                                                                                                                                                                                                                                                                                                                             546
                                                                                                                                                                                                                                                                                                                                                                                             3762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3645
          40
                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   427
                                               20
                                                                                                                                                                                                                                                                                                                                                      4
                δÃ
                                                    δ
                                                                          В
                                                                                          Ş
                                                                                                                               Ş
                                                                                                                                                                  Š
                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
 밁
                                     В
                                                                                                              밁
                                                                                                                                                 망
                                                                                                                                                                                     밁
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                    381
                                                                                                               961
                                                                                                                                321
                                                                                                                                                   106
                                                                                                                                                                                      841
                                                                                                                                                                                                       281
                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                        361
                                                                                                                                                                                                                                          261
                                                                                                                                                                                                                                                                                                                  221
                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                              161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                           MetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyr
                                                                                                                                                                                                GlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSer
                                                                                                                                                                                                                        CysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGlnLeuAlaLeu
                                                                                                                                                                                                                                                                                                                                                                                                                      LeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsnProGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                               GlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GluAlaProArgSerProLeuAlaProSerGluGlyAlaGlySerAspValPheAspGly
                                                                                                                      AsnTyrLeuSerThrAspValGlySerGlyAlaGlyGlyMetValHisHisArgHisArg
                                                                                                                                                                                     GGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAACACAGACACGTTTGAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCACTGCAGAGGCTGCGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AspLeuGlyMetGlyAlaAlaLySGlyLeuGlnSerLeuProThrHisAspProSerPro
                                                                                            SerSerSerThrArgSerGlyGlyGlyAspLeuThrLeuGlyLeuGluProSerGluGlu
                                                                                                                                                   ATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGTGACTGCCTGTCCCTAC
                                                                                                                                                                                                                                                                                                                                                                         TGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAGCTGGCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                             CTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAACCCCCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCTGCAGGATATCCAGGAGGTGCAG
                                                                                                                                                                                                                         840
                                                                                                                                                                                                        300.
                                                                                                                                                                                                                                                                      260
                     400
                                                                                             360
                                                                                                                               340
                                                                                                                                                                    320
                                                                                                                                                                                      900
                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
  993
                                                                                                                                                   960
                                                                                                                                                                                                                                           280
                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                720
                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                       220
                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                           200
                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
```

. ....

õ

```
RESULT 15
US-09-854-356-10
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                   GENERAL INFORMATION:
APPLICANT: Cheever, Martin A.
APPLICANT: Gheysen, Dirk
                                                                                                                                       Sequence 10, Application US/09854356 Patent No. US20020177567A1
                APPLICANT: Corixa Corporation
APPLICANT: SmithKilne Beecham Biologicals
TITLE OF INVENTION: HER-Z/neu Fusion Protei
FILE REFERENCE: 014058-009810PC
                                                                                                                                                                                                                            1414
                                                                                                                                                                                                                                                                                                 1354
                                                                                                                                                                                                                                                                                                                                                                                                                                     1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1002
                                                                                                                                                                                                                                                                                                                                                                  1294
                                                                                                                                                                                                                                                               681
                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                                     641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LeuGlyLeuAspValProAlaAlaAlaProAlaArgSerProSerProSerThrGlnPro 560
                                                                                                                                                                                                                            CCG-----GCGCATCACCATCACCATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGlyAlaAlaProGlnProHis
                                                                                                                                                                                                                                                               ProAlaAlaAlaHisHisHisHisHis 690
                                                                                                                                                                                                                                                                                                                   PheLeuLeuValIleProPheAspCysTrpGluProValGlnGluGlyAlaProProPro 680
                                                                                                                                                                                                                                                                                                                                                                  GAAACTGACTGTGAAATAGAAGTCACCACCTTTGAGGATTTCATAAAGAACCTTAAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                 GluThrSerCysAlaThrGlnIleIleThrPheGluSerPheLysGluAsnLeuLysAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCAATGGCGCCTTGACCATGATAGCCAGCCACTACCAGACGAACTGCCCTCCAACCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       LeuLysGlyProLeuThrMetMetAlaSerHisTyrLysGlnHisCysProProThrPro 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AlaAlaGluMetAsnGluThrValGluValIleSerGluMetPheAspLeuGlnGluPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGAAGCATGTAGATGCCATCAAAGAAGCTCTGAGCCTCCTAAATGACATGCGTGCTCTG 1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TrpGluHisValAsnAlaIleGlnGluAlaArgArgLeuLeuAsnLeuSerArgAspThr-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GluArgGlyAlaProProSerThrPheLysGlyThrProThrAlaGluAsnProGluTyr 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       {\tt ProProProAlaPheSerProAlaPheAspAsnLeuTyrTrpAspGlnAspProProRes}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGlu 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LeuGlnArgTyrSerGluAspProThrValProLeuProSerGluThrAspGlyTyrVal 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ArgAlaLysThrLeuSerProGlyLysAsnGlyValValLysAspValPheAlaPheGly 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AlaProLeuThrCysSerProGlnProGluTyrValAsnGlnProAspValArgProGln
                                                                                                                                                                                                                                                                                               TTTCTGTTTGATATCCCTTTTGACTGCTGGAAGCCGGTCCAGAAAGGCGCGCCACCCCCG 1413
NUMBER: US/09/854,356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----GCCGCCCCCACCCGCTCACCCAACCCTGTCACCCGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----TTCGAGAAGTTG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----ATCATTAAT
                                    ogicals S.
Proteins
                                                                                                                                                                                                                            1437
                                                    ?
                                                                                                                                                                                                                                                                                                                                                                  1353
                                                                                                                                                                                                                                                                                                                                                                                                                                   1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; NAME/KEY: misc_feature
; LOCATION: (2999)..(3173)
; OTHER INFORMATION: prefe
; OTHER INFORMATION: (delt.
US-09-854-356-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
Š
                                  밁
                                                             Š
                                                                                                     밁
                                                                                                                                    Q
                                                                                                                                                                          밁
                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-821-883-2 (1-690) x US-09-854-356-10 (1-3955)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 10
LENGTH: 3955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 26
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT FILING DATE: 2001-05-09
PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR FILING DATE: 2000-01-28
PRIOR APPLICATION NUMBER: US 60/117,976
PRIOR APPLICATION NUMBER: US 60/117,976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature
LOCATION: (2999)..(3796)
OTHER INFORMATION: phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc_feature
LOCATION: (2188)..(3022)
OTHER INFORMATION: kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
LOCATION: (2057)..(3796)
OTHER INFORMATION: intracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: (26)..(1990)
OTHER_INFORMATION: extracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: rat HER-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: CDS
LOCATION: (26)..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: rat HER-2/neu
143
                                                                    123
                                                                                                       275
                                                                                                                                       103
                                                                                                                                                                          215
                                                                                                                                                                                                                                             155
                                                                                                                                                                                                        83
                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                95
                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                  71
                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                   23
                                                                                                                                                                                                                                           ATGCTCATCGCTCACAACCAGGTGAAGCGCGTCCCACTGCAAAGGCTGCGCATCGTGAGA
                                                                                                                           ValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIleValArg
                                                                                                                                                                                          TyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGlnGlyTyr 102
                                                                                                                                                                                                                                                                                                                                  GlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThrH1sLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCGCAATGATCATGAGGCTGGCGGCCTGGTGCCGCGGGGTTCCTCCTCGCCCTC
                                                    GlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAspProLeu 142
                                                                                                                                                                                                                                                                                                                CAAGTGTGTACCGGCACAGACATGAAGTTGCGGCTCCCTGCCAGTCCTGAGACCCACCTG
                                                                                                                                                                                                                                                                                                                                                                                                               PhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAlaSerThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPheLeuLeu
AsnAsnThrThrProValThr----GlyAlaSerProGlyGlyLeuArgGluLeuGlnLeu
                                                                                                                                                                          TACGTGCCTGCCAATGCCAGCCTCTCATTCCTGCAGGACATCCAGGAAGTTCAGGGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (3799)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 preferred portion of the ph (delta PD) of rat HER-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.23e-161
1968.00
35.87%
34.02%
52.63%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (KD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      domain
                                                                                                                                                                                                                                                                                                                                                                                  -----CTGCCCCCCGGAATCGCGGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ECD) of rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ICD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (PD) of rat HER-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HER-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of
```

rat

domain

HER-2/neu

5 밁 á 밁 á B õ 밁 õ 밁 ð 밁 ş В Ş

õ

82

214

154 62 94 70 22

122

274

334

Ş

Ş 밁 õ 밁 Š 밁 õ

329		329	γ
1474	AGTGGATTGGCTCTGATTCACCGCAACGCCCATCTCTGCTTTGTACACACTGTACCTTGG	1415	đ
329		329	Qy
1414	TTGACACTGCAAGGCCTGGGGATCCACTCGCTGGGGCTGCGCTCACTGCGGGAGCTGGGC	1355	ф
329		329	QΥ
1354	AGTGTCTTCCAGAACCTTCGAATCATTCGGGGACGGATTCTCCACGATGGCGCGTACTCA	1295	Ъ
329		329	γ
1294	CTGGAGGAGATCACAGGTTACCTGTACATCTCAGCATGGCCAGACAGTCTCCGTGACCTC	1235	В
329		329	δ
1234	GGGGACCCCTCCTCCGGCATTGCTCCGCTGAGGCCTGAGCAGCTCCAAGTGTTCGAAACC	1175	В
329		329	δ
1174	GAGTTTGATGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTTTGCCGGAGAGCTTTGAT	1115	B
 329		329	ð
 1114	TATGGTCTGGGCATGGAGCACCTTCGAGGGGGGGGGGCCATCACCAGTGACAATGTCCAG	1055	Ъ
329 ·		329	δ
1054	ACAGCTGAGGACGGAACACAGCGTTGTGAGAAATGCAGCAAGCCCTGTGCTCGAGTGTGC	995	D
329		329	Q
994	CCTGTCTACGGAAGTGGGATCCTGCACTCTGGTGTGTCCCCCGAATAACCAAGAGGTC	935	Дb
329	yrLeus	322	γO
934	CACAACCCTGAGGGTCGCTACACCTTTGGTGCCAGCTGCGTGACCACCTGCCCCTACAAC	875	В
321	ProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyrAsn	302	γO
874		815	B
301	ysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSerMet	282	δ
814	GGCTGCACGGGCCCAAGCATTCTGACTGGCTGGCCTGCCT	G (	용 :
38.1	vCvqThrG]vProI.vqH{qSerAqnCvqI.e.i\A}aCvqI.e.iqDheAqnH{qSerC]v	20	Q
754	GGTTGTGCCCGGTGCAAGGGCCGGCTGCCCACTGACTGCTGCCATGAGCAGTGTGCCCAC	ig i	ß :
3 4		) (	5 5
241	rgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCys	Ñ	\$ 5
634	AATCGTTCCCGGGCCTGTCCACCTTGTGCCCCCGCCTGCAAAGAC	575	B
221	LeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGlySer	202	Ş
574	TACCAGGACATGGTTTTGTGGAAGGACGTCTTCCGCAAGAATAACCAACTGGCTCCTGTC,	515	Ъ
201	yrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnO	182	Qy
514	CGAAGTCTCACAGAGATCCTGAAGGGAGGAGTTTTGATCCGTGGGAACCCTCAGCTCTGC	Us o	B 5
2 4	***************************************	י ת	
4.54	GACANTGTCGCCGCCTCCACACAGCAGAACCCCAGAAGAGAGAGCTCCACAGCTAGAGAGAG	395	문

2614	GTACACAGGGACCTGGCTGCCCGGAATGTGCTAGTCAAGAGTCCCAACCACGTCAAGATT	2555	Db
329		329	Qy
2554	CTGCTCAACTGGTGTGTTCAGATTGCCAAGGGGATGAGCTACCTGGAGGAĊGTGCGGCTT	2495	Db
329		329	Qy
2494	CCCTACGGCTGCCTTCTGGACCATGTCCGAGAACACCGAGGTCGCCTAGGCTCCCCAGGAC	2435	Ъ
329		329	Qy
2434	GTGTCCCGCCTCCTGGGCATCTGCCTGACATCCACAGTACAGCTGGTGACACAGCTTATG	2375	рь
329		329	Qy
2374	AAAGCCAACAAAGAAATTCTAGATGAAGCGTATGTGATGGCTGGTGTGGGTTCTCCGTAT	2315	рь
329		329	Qy
2314	GATGGGGAGAATGTGAAAATCCCCGTGGCTATCAAGGTGTTGAGAGAAAACACATCTCCT	2255	Db
329		329	Qy
2254	AAGGTGAAGGTGCTTGGATCAGGAGCTTTTGGCACTGTCTACAAGGGCATCTGGATCCCA	2195	DЬ
329		329	Оу
2194	CCCAGCGGAGCAATGCCCAACCAGGCTCAGATGCGGATCCTAAAAGAGAGACGGAGCTAAGG	2135	рь
329		329	Qy
2134:	ATCCGGAAGTATACGATGCGTAGGCTGCTGCAGGAAACTGAGTTAGTGGAGCCGCTGACG	2075	Дb
329		329	Qy
2074	CTGCTGTTCCTGATCTTAGTGGTGGTCGTTGGAATCCTAATCAAACGAAGGAGACAGAAG	2015	DЬ
329		329	Ωy
2014	TGCCCAGCAGAGCAGAGCCCAGCCCGGTGACATTCATCATTGCAACTGTAGAGGGCGTC	1955	Db
329		329	Qy
1954	ATATGCCAGCCGTGCCCCATCAACTGCACCCCACTCCTGTGTGGATCTGGATGAACGAGGC	1895	DЬ
329		329	Ωу
1894	AGTGGTGTGAAACCGGACCTCTCCTACATGCCCATCTGGAAGTACCCGGATGAGGAGGGC	1835	Db
329		329	Qy
1834	GATCAGTGTGCAGCCTGCGCCCACTACAAGGACTCGTCCTCCTGTGTGGCTCGCTGCCCC	1775	Db
329		329	Qy
1774	CCGTGTCACCCCGAGTGTCAGCCTCAAAACAGCTCAGAGACCTGCTTTGGATCGGAGGCT	1715	Db
329		329	Qy
1714	GAGGAGTGCCGAGTATGGAAGGGGCTCCCCCGGGAGTATGTGAGTGA	1655	DЬ
329		329	Qy
1654	GGGCCAGGGCCCACCCAGTGTGTCAACTGCAGTCATTTCCTTCGGGGCCCAGGAGTGTGTG	1595	Db
329		329	Qy
1594	GACTTGTGCGTCTCGAGCGGCTTGGTCTGTAACTCACTGTGTGCCCCACGGGCACTGCTGG	1535	рь
329		329	Qy
1534	GACCAGCTCTTCCGGAACCCACATCAGGCCCTGCTCCACAGTGGGAACCGGCCGG	1475	Db

~	329	329	
σ	2615	ACAGATTTCGGGCTGGCTGGCTGGACATTGATGAGACAGAGTACCATGCAGATGGG 2674	
~	329	329	
σ	2675	GGCAAGGTGCCCATCAAATGGATGGCATTGGAATCTATTCTCAGACGCCGGTTCACCCAT 2734	
~	329	329	
σ	2735	CAGAGTGATGTGTGGAGCTATGGAGTGACTGTGTGGGGAGCTGATGACTTTTGGGGGCCAAA 2794	•
~	329		
σ	2795	CCTTACGATGGAATCCCAGCCCGGGAGATCCCCTGATTTGCTGGAGAAGGGGAGAACGCCTA 2854	
~	329	329	:
σ	2855	CCTCAGCCTCCAATCTGCACCATTGATGTCTACATGATTATGGTCAAATGTTGGATGATT 2914	
~	329	329	
σ	2915	GACTCTGAATGTCGCCCGAGATTCCGGGAGTTGGTGTCAGAATTTTCACGTATGGCGAGG 2974	
4	329	329	
σ	2975	GACCCCCAGCGTTTTGTGGTCATCCAGAACGAGGACTTGGGCCCCATCCAGCCCCATGGAC 3034	
~	329	329	
σ	3035	AGTACCTTCTACCGTTCACTGCTGGAAGATGATGACATGGGTGACCTGGTAGACGCTGAA 3094	
×	330	lyAlaG	
σ	3095	GAGTATCTGGTGCCCCAGCAGGGATTCTTCTCCCCGGACCCTACCCCAGGCACTGGGAGC 3154	
~	33	etValH1sH1sArgH1sArgSerSerSerShrArgSerGlyGlyGlyAspLeuThrLeu 35	
6	U L U	A I AGAAGGCACCGCAGCI CGI CCACCAGGAG I GGAGG I GGI GAGCI GACACI	
ь ч	354 3215	GlyLeuGluProSerGluGluAlaProArgSerProLeuAlaProSerGluGlyAla 373	
٧	374	erAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSer	
σ	3275	GCTCCGATGTGTTTGATGGTGACCTGGCAATGGGGGTAACC	
<b>5</b> 4	394	ProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrValProLeuPro 413	
<	414	rGluThrAspGlvTvrValAlaProLeuThrCvsSerProGlnProGluTvrVa	
σ ×	ý H	CCGAGACTGATGCTATGTTGCTCCCCTGGCCTGCAGCCCCAGCCCGAGTATGTGAAC 34	
· ×	43	roAspValArgProGinProProSerProArgGluGlyProLeuProAlaAlaArg 45	
c	3433	AATCAGAGGTTCAGCCTCAGCCTCTTTAACCCCCAGAGGGTCCTCTGCCTCTGTCCGG J	
8 4	454 3515	ProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsnGlyValVal 473	
· ~	474	LysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrProGlnGly 493	
<	49	AlaAlaProGinProHisProProProAlaPheSerProAlaPheAspAspLeuTvr 51	
ρ <	ūυ	CT	

	36	Search completed: May 8, 2003, 14:57:36 Job time : 285 secs	Search completed: M Job time : 285 secs	rch con	Sea Job	
		880	3875 AGGGTC 3880	3875	DЪ	
		64	563 HisVal 564	563	Qy	
3874	3815 CCTGTGCTTTCAGAGTGGGGAAGGCCTGACTTGTGGTCTCCATCGCCACAAAGCAGGAG 3874	TTCAGAGTGGGGAAGGCCTG	ccrerecr	3815	Db	
562	SerProSerThrGlnProTrpGlu 562		554 Pro	554	Qy	
3814	3755 ACTGCAGAGAACCCTGAGTACCTAGGCCTGGATGTACCTGTATGAGACGTGTGCAGACGT 381	GAACCCTGAGTACCTAGGCC	ACTGCAGA	3755	DЬ	
553	534 ThralaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaProAlaArgSer 553	ThrAlaGluAsnProGluTyrLeuGlyLeuAspValProA	ThrAlaGl	534	Qy	
3754	3695 TACTGGGACCAGAACTCATCGGAGCAGGGGCCTCCACCAAGTAACTTTGAAGGGACCCCC 3754	CCAGAACTCATCGGAGCAGG	TACTGGGA	3695	Db	
533	514 TyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGlyThrPro 533	pGlnAspProProGluArgG	TyrTrpAs	514	Qy	

CHECK WAS DESCRIPTED TO SERVICE SHAPE OF THE PROPERTY OF THE P

.....

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                         -Q+/cgn2_1/USFTO_spoo1/US09821883/runat_28042003_104750_14590/app_query.fasta_1.839
-DB=Issued_patents_NA -QFMT=fastap -SUFFIX-ppn.rni -MINMATCH=0.1 -LOOPCL=0
-LOOPEXT=0 -UNITS-blts -START=1 -END=-1 -MATRIX-blosum62 -TRANS-human40.cdi
-LIST=45 -DOCALIGN=200 -THR_SCORE-pct -THR_MAX=100 -THR_MIN=0 -ALIGN=15
-MODE-LOCAL -OUTEMT-pto -NORM-ext -HEAPSIZE-500 -MINLEN=0 -MAXLEN=200000000
-USER-US09821883_@CGN_11_1_61_@runat_28042003_104750_14590 -NCPU-6 -ICPU-3
-NO.XLPXY -NO_MMAP -LARGEQUERY -NGC_SCORES-0 -NAIT -LONGLOG -DEV_TIMEOUT=120
-WARN_TIMEOUT=30 -THREADS-1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPOP=6 -FGAPEXT=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - nucleic search, using frame_plus_p2n mode:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MODEL-frame+
                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to be score greater than or equal to the score of the result being and is derived by analysis of the total score distribution
                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                -YGAPEXT-0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            p2n.model -DEV=xlp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Xgapop 10.0 , Ygapop 10.0 , Fgapop 6.0 , Delop 6.0 , I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-821-883-2
3739
                                                                                                                                                                                    Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   May 8, 2003, 12:34:18; Search time 79 Seconds
                                                                                                                                                                                                Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               441362 seqs,
52.66
                                                                                                                                                                                                                                                                                                                                                                                                 Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MRAAPLLLARAASLSLGFLF...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Copyright
                                                                                                                                                                                                                                                                                                                          /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
/cgn2_6/ptodata/1/ina/5B_COMB.seq:*
/cgn2_6/ptodata/1/ina/6B_COMB.seq:*
/cgn2_6/ptodata/1/ina/6B_COMB.seq:*
/cgn2_6/ptodata/1/ina/FCTUS_COMB.seq:*
                                                                                                                                                                                                                                                                                                              /cgn2_6/ptodata/1/ina/backfiles1.seq:*
                                                                                                                                                                                   Length
                          3768
2385
2385
2385
                                                                                                                                                                                                                                                                                                                                                                                                                                  -DELOP-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>(c)</u>
                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                153338381 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xgapext
Ygapext
Fgapext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.4_p5_4578 c) 1993 - 2003 Compugen Ltd.
          US-08-229-515A-9
US-08-645-865-9
US-09-167-322-4
US-09-048-804-1
US-09-055-101-26
US-08-625-101-1
US-08-525-101-1
US-08-156-786-1
US-08-146-283-3
US-08-229-515A-14
                                                                                                                                                                                                                                                                                                                                                                                                                                  -DELEXT-7
                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.5
7.0
7.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (without alignments)
2678.569 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ЕРУОЕСАРРРАААННННН 690
                                                                                                                                                                                                                                                                chance to have a result being printed,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     882724
                       Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                           Sequence
Sequence
                                                                                                                                                                                Description
Sequence
             Sequence
                                                                                                            Sequence
                                                                                                                                                       Sequence
                         Appl
Appl
Appl
Appl
Appl
                                                                                             Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
US-08-229-515A-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY:
STATE:
```

~	85.		85.	85.	85.	9	9	9	693	9	-	14.	14.	٠	14.	$\vdash$	_	N	2	2	22.		24.	24.	24.	25.	25.	7	7	7	1647	64
8	.8	8	8	8	ъ.	8	8	8	8	œ	9	9.	9	9.	9.		9	9.	9.	9.	9.	9.	9.	9.	9.	9.	9.	0	0	0	44.0	
9	0	0	0	0	0	$\sim$	Ν	Ν	Ν	2	95	7	90	90	90	0	0	55	0	48	90	9	53	S	59	98	98	8	83	58	1872	87
1	u	4	4	w	w	G	4	4	w	w	4	4	N	۲	ب	_	σ	۳	ب	4	۳	σ	4	N	4	4	ب	4	ω	'n	4	ω
S-08-318-193-	T-US95-01185-6	-08-762-227A-	-08-446-872A-6	-08-468-609A-6	-08-469-318-6	T-US95-01185-6	-08-762-227A-	-08-446-872A-6	8-468-609A-6	-08-469-318-6	-09-570-454-	-09-630-706-	-08-475-352-	-08-473-119-	-07-978-895-	8-318-193-	00327-3	-08-484-438-	-08-484-438	-09-632-580	-08-318-193-	00327-2	-09-676-610	-08-475-035	-09-676-610B-2	-09-676-610	-08-658-883B-	9-344-195	S-08-579-823A	S-09-146-283-	S-08-422-734	S-08-422-108-
equence 1, App	equence 66, App	equence 69, Ap	equence 69, Ap	equence 69, Ap	e 69, Ap	equence 69, Ap	equence 1, App	equence 3, App	equence 3, App	equence 3, App	equence 3, App	equence 9,	tent No. 52003	equence 3, App	equence 1, App	equence 3, App	equence 7,	tent No. 52003	equence 17, Ap	equence 3, Appl	equence 25, App	equence 26, Ap	equence 1, Appl	equence 1, App	equence 1, Appl	equence 1, App	e 2, App	equence				

## ALIGNMENTS

```
Sequence 9, Application US/08229515A Patent No. 5518885
                                   TELEFAX: 404-688-9880 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: RAZIUDLIN
APPLICANT: SARKAR, FAZLUL H
TITLE OF INVENTION: ERBB2 PROMOTER BINDING PROTEIN
TITLE OF INVENTION: NEOPLASTIC DISEASE
                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOSTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                         REGISTRATION NUMBER: 33,438
REFERENCE/DOCKET NUMBER: 14
TELECOMMUNICATION INFORMATION:
TELEPHONE: 404-688-0770
                                                                                                                                                    CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: PERRYMAN, DAVID G
                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
SEQUENCE CHARACTERISTICS:
LENGTH: 4530 base pair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
ZIP: 303
                                                                                                                                                                                                          APPLICATION NUMBER: US/08/229,515A FILING DATE: 19 APR 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                 30303
                                                                                                                                                  PERRYMAN, DAVID G
                                                                                                                                                                                                                                                                                                                                                                                                                       Atlanta
                                                                                                                                                                                                                                                                                                                                                                                                     Georgia
                                                                                                                                                                                                                                                                                                                                                                                 usa
                                                                                                                                                                                                                                                                                                                                                                                                                                    127 Peachtree
                                                                                                                                                                                                                                                                                                                                                                                                                                                              NEEDLE
                                                                                                                                                                                                                                                                                                                                                                                                                                        & ROSENBERG PC
Tree Street, Suite 1200
                                                                                                                                                                                                                                                                    Release #1.0,
                                                                                                                               33,438
                                       ဖ
                                                                                                                 1414.608
                                                                                                                                                                                                                                                                    Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H
```

```
S
                   밁
                              Š
                                            밁
                                                         S
                                                                        В
                                                                                  δ
                                                                                                  В
                                                                                                              Š
                                                                                                                             В
                                                                                                                                      Ş
                                                                                                                                                      B
                                                                                                                                                                 Ş
                                                                                                                                                                                 밁
                                                                                                                                                                                           Ş
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                        Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
US-08-229-515A-9
                                                                                                                                                                                                                                                                                                                                                                                                 US-09-821-883-2 (1-690) x US-08-229-515A-9 (1-4530)
                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores: Pred. No.:
                     865
                                              805
                                                           238
                                                                        745
                                                                                                   685
                                                                                                                             625
                                                                                                                                         178
                                                                                                                                                                                                            445
                                  258
                                                                                                                198
                                                                                                                                                        565
                                                                                                                                                                    158
                                                                                                                                                                                  505
                                                                                                                                                                                               138
                                                                                                                                                                                                                         118
                                                                                     218
                                                                                                                                                                                                                                      385
                                                                                                                                                                                                                                                                325
                                                                                                                                                                                                                                                                                          265
                                                                                                                                                                                                                                                                                                                    205
                                                                                                                                                                                                                                                                                                                                               154
                                                                                                                                                                                                                                                  98
                                                                                                                                                                                                                                                                                                       88
                                                                                                                                                                                                                                                                                                                                38
                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                                                                                                                                                                                           18
                                                                                                                                                                                                                                                                                                                                                                        94
                                                                                                                                                                                                                                                                                                                                                                                     N
                  AsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThr
                                                                       LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet
                                                                                                                                                      CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAG
                                                                                                                                  ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln
                                                                                                                                                                                        AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg
                                                                                                                                                                                                                                                                                                                                             GAGCTGGCGGCCTTGTGCCGCTGG------GGGCTCCTCCTCGCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                                                                                                                        PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                                                                                                                                                                                                       CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGGCCGGAGCCGCAGTGAGCACCATG
                                                                                                                                                                                                                                                                                                                                                                                    ArgAlaAlaProLeuLeuAlaArgAla-----
                                                                                                                                                                                AATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCAGGAGGCCTGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                     6.58e-161
2423.00
41.14%
40.75%
64.80%
                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                              AlaSerLeuSerLeuGly
                                                                                                                                                                                             157
                                                                                                                                         197
                                                                                                                                                                    177
                                                                                                                                                                                                                                                                                                                                57
      297
                   924
                                              864
                                                                        804
                                                                                                 744
                                                                                                              217
                                                                                                                            684
                                                                                                                                                      624
                                                                                                                                                                                564
                                                                                                                                                                                                                                                                           97
                                                                                                                                                                                                                                                                                         324
                                                                                                                                                                                                                                                                                                     77
                                                                                                                                                                                                                                                                                                                                             204
                                                                                                                                                                                                                                                                                                                                                                                    17
                                                                                                                                                                                                                                                               384
                                                                                                                                                                                                                                                                                                                                                          37
                                                                                      . ..
```

	GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGGACCTGGAT 2064	2005	. pb	
	329	329	Qγ	
	CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCCATCTGGAAGTTTCCAGAT 2004	1945	Db	
	329	329	γQ	
	CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	1885	Db	
	329	329	Qy	
	CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1884	1825		
	329	329	Qy	
	GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG 1824	1765	Db	
	329	329	Qy	
	CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGGCCAG 1764	1705	ф	•
	329	329	Qy	
	CGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCACCAGCTGTGÇGCCCGAGGG 1704	1645	дь	
	329	329	Qy	
٠.	ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1644	1585	Db	
	329	329	Qy	
	AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCACC	1525	ДD	
	329	329	Оу	
	GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	1465	Db	
	329	329	Qy	
•	CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT 1464	1405	da	
	329	329	Оу	
	GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1404	1345	Db	
	329	329	Qy	
	GAGAGCTTTGATGGGGACCCCAGCCTCCAACACTGCCCCGCTCCAGCCCAGAGCAGCTCCAA 1344	1285	Db	
	329	329	Qy	
	GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 1284	1225	Db	
	329	329	Qy	
	GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT 1224	1165	da	
	329	329	Qy	
	AACCAAGAGGTGACAGCAGGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT 1164	1105	מם	
	329	329	Оу	
	TGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCCTGCAC 1104	1045	מם	
	-σ	318	Qy	
	TTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGTGACTGCC 1044	985	מם	
	PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla 317	298	Qy	
	AACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAACACAGACACG 984	925	dg bb	

Ş

õ

밁

ş 밁

Q

밁

JUBD ATGUCCAGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG		TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC 3	329 329	2965 GAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 3024	329 329	2905 GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCCTGACCTGCTGGAAAAGGGG 2964	329 329	2845 TTCACCCACCAGAGTGATGTGGAGTTATGGTGTGACTGTGTGGGGAGCTGATGACTTTT 2904	329 329	2785 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 2844	329 329	2725 GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT 2784	329 329	2665 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 2724	329 329	2605 TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 2664	329 329	2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAAACCGCGGGACGCCTGGGC 2604	329 329	2485 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2544	329 329	2425 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 2484	329 329	2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2424	329 329	2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCCCCTTTTGGCACAGTCTACAAGGGCATC 2364	329 329	2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGGATCCTGAAAGAGACG 2304	329 329	2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2244	329 329	2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG 2184	329 329	2065 GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG 2124	329 329
				,				. •	-																								-		· : ·
; COUNTRY: usa ; ZIP: 30303	7	SE: NEEDLE 127 Peacht	OF SEQUENCES	TITLE OF INVENTION: ERBERT PROMOTER BINDING PROTEIN IN TITLE OF INVENTION: NEOPILATIC DISEASE	ANT: RAZIUDDI	APPLICATION US/US043803 5654406 FORMATTON:	10 1000,1000,1	212 NECEDIANOSECTATION STATE STATE	3010 30030300000300000 3036 3010 30030300000300000 3036 3010 3003030000000000000000000000000000	FEI 11-1-10-10-10-10-10-10-10-10-10-10-10-10	2865 CCC	3003 MACCICIALIACIONONCCHOUNCCHOCHOCHOCHOCHOCHOCHICHAN 3004		3/43 CCCCM899M96M9C19CCCCLCM8CCCCMCCCLCCLCCLCCAGCCACCAACCAACCAACCAACCAACCA	491 ProG.InGiyd.jyAlaAlaProGInProHisProProProProHill	2002 GRANDICALCHUMANACHURITITIACCITITIACHURINACHUCHUMATACTIANCH	4/1	2023 BETBECCERCTRETISTES TO THE STORY OF THE	2 4 C A C A C A C	3565 TATGTGAACCAGCCAGATGTTCGGCCCCCAGCCCCCTTCGCCCCCGAGAGGGCCCTCTGCaga	431 TyrValAsnG1nProAspValArgProG1nProProSerProArgG1uG1yProEeuPro	3505 CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAA	411 ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 430		391 GinSerLeuProThrHisAspProSerProLeuGinArgTyrSerGiuAspProThrVai	3385 GAAGGGGCTGCCTATGTATTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCTG	371 GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeu	CTGACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTGGCACCCTCC	351 LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer 370	65 GCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGAC	331 AlaGlyGlyMetValH1sArgH1sArgSerSerThrArgSerGlyGlyGlyAsp 350	3205 GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC 32	330	3145 CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTG	329

```
Percent Similarity:
Best Local Similarity:
Query Match:
                        á
                                              밁
                                                                  Ş
                                                                                           밁
                                                                                                               ş
    밁
                                                                                                                                       밁
                                                                                                                                                         Š
                                                                                                                                                                                   밁
                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-821-883-2 (1-690) x US-08-645-865-9 (1-4530)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
US-08-645-865-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
LENGTH: 4530 base pairs
TYPE: nucleic acid
STRANDENNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/645,865
FILING DATE: 14 MAY 1996
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: PERRYMAN, DAVID G
REGISTRATION NUMBER: 33,438
REFERENCE/DOCKET NUMBER: 1414.608
TELECOMMUNICATION INFORMATION:
    625
                                                565
                                                                                           505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     о
:
                                                                                                                 138
                                                                                                                                        445
                                                                                                                                                                                325
                                                                     158
                                                                                                                                                             118
                                                                                                                                                                                                                                                                            265
                                                                                                                                                                                                                                                                                                                       205
                                                                                                                                                                                                                                                                                                                                                                 154 GAGCTGGCGGCCTTGTGCCGCTGG------GGGCTCCTCCTCGCCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                     78
                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                 38 GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer
                                                                                                                                                                                                                                                                                                                                                                                         18
                                                                                                                                                                                                                                                                                                                                                                                                            94 CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGGCCGGAGCCGCAGTGAGCACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                       AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg
                                                                                                                                     AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln
                                                                                                                                                                                                                                                                          CCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGGTGCAGGGA
                                                                                                                                                                                                                                                                                      ProGluThrH18LeuAspMetLeuArgH1sLeuTyrGlnGlyCysGlnValValGlnGly
                                                                                                                                                                                                                               GGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                     PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          READABLE FORM:
TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  404-688-0770
404-688-9880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.58e-161
2423.00
41.14%
40.75%
64.80%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Version #1.30
                                                                                                                                                            137
                                                                                                                                                                                                        117
                                              624
                                                                    177
                                                                                          564
                                                                                                               157
                                                                                                                                       504
                                                                                                                                                                                  444
                                                                                                                                                                                                                               384
                                                                                                                                                                                                                                                    97
                                                                                                                                                                                                                                                                          324
                                                                                                                                                                                                                                                                                                77
                                                                                                                                                                                                                                                                                                                    264
                                                                                                                                                                                                                                                                                                                                           57
                                                                                                                                                                                                                                                                                                                                                                 204
```

1764	1705 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1	рь	
329	329	Qy	
1704	1645 CGGCCAGAGGACGAGTGTGTGGGGCGAGGGCCTGGCCTG	рb	
329	329	Qy	
1644	1585 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCAÇACTGCCAAC	Db	
329	329	Qy	
1584	1525 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC	Db	
329	329	Qy	
1524	1465 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGGCTGGGGCTGCGCTCACTG	Db	
329	329	Qy	
1464	1405 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT	D	
329 .	329	Qy.	
1404	1345 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC	Db	
329	329	Qy	
1344	1285 GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG	Db	
329	329	Qy	
1284	ATTTCTGCCG	Db	
329	329	Qy	
1224	SAGAGGTGAGGGCAGTTACCAGT	Db	
329	329	Qy	
1164	1105 AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAAGCCAAGCCCTGT	Db	
329 .	329	Qy	
1104	1045 TGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCTGCAC	Db	
329	ysProTyrAsnTyrLeuSerThrAspValGlySer	Qy	
1044	985 TITGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGACTGCC	Db	
317 .	heGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla	Qy	
984		Дb	
297	pThr	γQ	
924	865 CAGTGTGCTGCCGGCTGCACGGGCCCCAAGCACTCTGACTGCCTGC	DЬ	
277		VΩ	
864	805 GTCTGTGCCGGTGGCTGTGCCCGCTGCAAGGGGCCACTGCCCCACTGACTG	DЬ	
257		Qy	
804	218 CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr	Db Qy	
144	CTGGCTCTCACACTGATAGACACCCAACCGCTCTCGGGGCCTGCCACCCCTGTTCTCCGATG	Ü	
217	98 LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet	Qy	

	29	329 3	Qy
2 8	2844	2785 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 2	₽
² - Ş	329	329 3	Qy
? 5	2784	2725 GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT 2	₽
ş 5	329	329 3	Qy
? 5	2724	2665 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCCAACCAT 2	₽
ş Ş	329	329 3	Qy
2 5	2664	2605 TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 2	망
· ·	329	3293	Qy
	2604	2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCCGGACGCCTGGGC 2	₽
P 5	329	329 3	Qy
? 8	2544	2485 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2	₽
g 5	329	329 3	Qy
	2484	2425 ACATCCCCCAAAGCCAACAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 2	В
ş Ş	329	329	Qy
· 5	2424	2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2	Ъ
2 5	329	329 3	οy
? 5	2364	2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2	문
; 5	329	329 3	Q
) 	2304	2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2	В
Qy	329		Qy
) E	2244	2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2	Ъ
, iS	329	329 3	οy
2 5	2184	2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTCTTTGGGATCCTCATCAAGCGACGG 2	Db
	329	3293	γO
מט	2124	2065 GACAAGGGCTGCCCCGCCGAGCAGAGAGCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG 2	В
2 2	329	329 3	Qy
? 5	2064 .	2005 GAGGAGGGCGCATGCCAGCCTTGCCCCCATCAACTGCACCCCACTCCTGTGTGGGACCTGGAT 2	Db
; Q	329	329 3	Qγ
) E	2004	1945 CGCTGCCCCAGCGGTGTGAAACCTGACCTCCTACATGCCCCATCTGGAAGTTTCCCAGAT 2	₽
ł 5	329	329 3	Qγ
) b	1944	1885 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	Db
2 5	329	329 3	γ
) Db	1884	1825 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1	문
. Q	329	329 3	9
00	1824	1765 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTGAATGCCAGG 1	문
 !	329	329 3	Q

531 GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro 5		
11 AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrP	ω	
491 ProGlnGlyGlyAlaAlaProGlnProH1sProProProAlaPheSerProAlaPhe	Qy Db 3	
471 GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuTh 		
451 AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAs 		
431 TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro		
411 ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGl 		
391 GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVa		
371 GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLe 		
351 LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSe 		
331 AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAsp		_ ^
	ω	_
()		
329	, K	
3085 ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG		_
329	Ωу	_
3025 TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCG		_
329	Qy	_
2965 GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATG		
329	γ	_
2905 GGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGGACCTGGGAAAAGGG	Db 2	
329	Qy	_
2845 TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTT	Db 2	_

564 157 504 137 444

```
õ
                                                                                                                           밁
                                                                                                                                                     õ
                                                                                                                                                                                                          ş
              밁
                                    õ
                                                                     밁
                                                                                                                                                                                 밁
                                                                                                                                                                                                                                        US-09-821-883-2 (1-690) x US-09-167-322-4 (1-4530)
                                                                                                                                                                                                                                                                     DB:
                                                                                                                                                                                                                                                                                                                          Score:
                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE DESCRIPTION: SEQ US-09-167-322-4
                                                                                                                                                                                                                                                                                  Query Match:
                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-167-322-4
                                                                                                                                                                                                                                                                                                                                                                                                      NAME: MONAGO, Daniel A.
REGISTRATION NUMBER: 30,480
REFERENCE/DOCKET NUMBER: 7933-33 PC
TELECOMMUNICATION INFORMATION:
TELEPHONE: (215) 568-8383
TELEFAX: (215) 568-5549
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 4530 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4, Application Patent No. 6365151 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3919
                                                                                                                                                                                                                                                                                                                                          ₹
::
                                                                      205
                                                                                                                            154
                                                                                               38
                                                                                                                                                        18
                                                                                                                                                                                   94
                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: Seidel, Gonda, Lavorgna & Monaco,
STREET: Suite 1800, Two Penn Center Plaza
CITY: Philadelphia
STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: PCT/US97/00582 FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/09/167,322
FILING DATE: 07-Oct-1998
CLASSIFICATION: cUnknown>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Allegheny University of the Health
Sciences, Halpern, Michael S.
England, James M.
TITLE OF INVENTION: CANCER VACCINE
           GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer
                                                                                                                            GAGCTGGCGGCCTTGTGCCGCTGG-----
                                                                                                                                                                                                             ArgAlaAlaProLeuLeuLeuAlaArgAla----
                                                                                                                                                    PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                 CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCGGAGCCGCAGTGAGCACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible OPERATIG SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version PRICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                              6.58e-161
2423.00
41.14%
40.75%
64.80%
                                                                                                                                                                                                                                                                                                                                                                                               ij
                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                ĕ
                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                           -GGGCTCCTCCTCGCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                -AlaSerLeuSerLeuGly
|||::::::|||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #1.30
              324
                                       77
                                                                   264
                                                                                               57
                                                                                                                           204
                                                                                                                                                       37
                                                                                                                                                                                 153
                                                                                                                                                                                                             17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
õ
                           밁
                                                    Š
                                                                                В
                                                                                                           õ
                                                                                                                                       밁
                                                                                                                                                                 Ş
                                                                                                                                                                                              В
                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                           1045
                                                                                                                                        1225
                                                                                                                                                                                                1165
                                                                                                                                                                                                                                                      1105
                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                       318
                                                                                                                                                                                                                                                                                                                                                                   985
                                                                                                                                                                                                                                                                                                                                                                                               298
                                                                                                                                                                                                                                                                                                                                                                                                                           925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     385
                                                                                                                                                                                                                                                                                                                                                                                                                                                       278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     78
                                                                                                                                                                                                                                                                                                                        CysProTyrAsnTyrLeuSerThrAspValGlySer-----
                                                                                                                                                                                                                                                                                                                                                                                  PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT 1224
                                                                                                                                                                                                                                                     AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT 1164
                                                                                                                                                                                                                                                                                                           TGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                        AsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCTGCAGCTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg
                           GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC
                                                                                                                                        GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG
                                                                                                                                                                                                                                                                                                                                                                   TTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGTGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                           AACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAACACAGACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGGCCTCCCCAGGAGGCCTGCCG
```

1284

329

329

1104

329

329

1044

984 297 924 277 964 804 237

257

217 684 197 624 177

329

1404

₽

Ş 밁 ş B

Ş

밁

```
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                    Percent Similarity:
Best Local Similarity:
                                             Score
                                                                                           ; ANTI-SENSE:
US-09-048-804-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-048-804-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                        Pred.
                                                                    Alignment Scores
                                                                                                                         TELEFAX: (215) 568-3439
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 4473 base pairs
TYPE: Nucleic Acid
STRANDEDNESS: Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1, Application US/09048804 Patent No. 5968748 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: 1.44 Mb diskette
COMPUTER: 118M PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3685
                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: (215) 568-3100
                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: Paul K. Legaard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                    STREET: One Liberty CITY: Philadelphia STATE: PA COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    451
                                                                                                                                                                                                                                                                     APPLICATION NUMBER: U: FILING DATE: Herewith CLASSIFICATION:
                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: IS
                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AlaargSerProSerPro 556
||| |||||||||||
ACCAGAAGGCCAAGTCCG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProGlnG1yG1yA1aA1aProGlnProH1sProProProA1aPheSerProA1aPheAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACCTCTATTACTGGGACCAGGACCCACCAGAGCGGGGGGGCTCCACCCAGCACCTTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCCAGGGAGGAGCTGCCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCGAGTACTTGACA
                                                                                                                                                                                                                                                                                                                                                                   19103
R PT
                                                                                                                                                                                                                                                                                                                                                                                                                       3: Woodcock Washburn
One Liberty Place - 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                           C. Frank Bennett, Allan Lipton, Lois M. Witters VENTION: ANTISENSE OLICONUCLECTIDE MODULATION OF VENTION: HUMAN HER-2 EXPRESSION EQUENCES: 10
                                                                                                       ĕ
                                                                                                                 Unknown
1.45e-160
2418.00
41.068
40.678
64.678
                                                                                                                                                                                                                                                                                              US/09/048,804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3936
                                                                                                                                                                                                                         ISIS-2913
                                                                                                                                                                                                                                                                                                                                                                                                                         n Kurtz Mackiewicz
46th Floor
      Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                    Version
                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
.
                                                                                                                                                                                                                                                                                                                                                                                                                                    5968748ris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   470
                                                 Qy
                                                                            В
                                                                                                 Qy
                                                                                                                                              ρ
                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
       Ş
                               В
                                                                                                                            밁
                                                                                                                                                                          망
                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                    뫄
                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-821-883-2 (1-690)
                                                                               1009
                                                     318
                                                                                                     298
                                                                                                                            949
                                                                                                                                                   278
                                                                                                                                                                           688
                                                                                                                                                                                                                        829
                                                                                                                                                                                                                                                                      769
                                                                                                                                                                                                                                                                                           218
                                                                                                                                                                                                                                                                                                                                                                 649
                                                                                                                                                                                                                                                                                                                                                                                                              589
                                                                                                                                                                                                                                                                                                                                                                                                                                                           529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  349
                                                                                                                                                                                                 258
                                                                                                                                                                                                                                             238
                                                                                                                                                                                                                                                                                                                  709
                                                                                                                                                                                                                                                                                                                                         198
                                                                                                                                                                                                                                                                                                                                                                                      178
                                                                                                                                                                                                                                                                                                                                                                                                                                    158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
                                          CysProTyrAsnTyrLeuSerThrAspValGlySer-----
                                                                            ASDHISSETGLYILECYSGLULEUHISCYSPTOALALEUVALThTTYTASDThT
                                                                                                                                                                         ValCysAlaG1yG1yCysAlaArgCysLysG1yProLeuProThrAspCysCysHisGlu
                                                                                                                                                                                                                                                                     LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet
                                                                                                                                                                                                                                                                                                                                                                            ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln
                                                                                                                                                                                                                                                                                                                                                                                                           ASDG1yASpProLeuASDASDThrThrProValThrG1yAlaSerProG1yG1yLeuArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValPrpLeuGlnArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATG
                                                                                                                                                                                                                                                                                                                                                               CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGTGCAGGGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCCACTGQAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCGGAGCCGCAGTGAGCACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ArgAlaAlaProLeuLeuLeuAlaArgAla--
                                                                                                                                                                                                                        CTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   x US-09-048-804-1 (1-4473)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ------AlaSerLeuSerLeuGly
```

708

157 588 177 648 197

1128

329

1008 317 1068 217
768
237
828
828
257
257
948

117

468 137 528 408

		2268	CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	2209	В
D 2		329		329	δ
		2208	GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG	2149	g
		329		329	Ŷ
O		2148	GACAAGGGCTGCCCGGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCATCTCTGCGGTG	2089	Вb
D	-	329		329	Q
O (		2088	GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCCACTCCTGTGTGGACCTGGAT	2029	₽
Dh 15	-	329		329	δ
Q (	٠	2028	CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGAT	1969	ğ
J 1		329		329	δ
2 5		1968	CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCCTCCCT	1909	망
g (		329		329	οy
O 10		1908	) CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA	1849	뭥
<u> </u>		329		329	Qγ
	•	1848	GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG	1789	망
<u> </u>	٠.	329		329	Q
Q 6		1788	CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG	1729	밁
g 5		329		329	Ş
		1728	CGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG	1669	日
D 5		329		329	δÃ
	-	1668	ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC	1609	밁
) K		329		329	QΥ
		1608	AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC	1549	В
J. (	•	329		329	δ
	;	1548	GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGGCTGGGGCTGCGCTCACTG	1489	ф
<u> </u>		329		329	Š
2 5		1488	) CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATTCTGCACAAT	1429	Ъ
Ş Ş		329		329	δ
? 5	•	1428	GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC	1369	밁
Z 5	•	329		329	QΥ
? 8		1368	GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG	1309	망
} .		329		329	δ
2 5		1308	GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG	1249	₽
F 5	•	329		329	δ
2 5		1248	GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT	1189	ф
r 5		329		329	Ş
<u> </u>		1188	AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT	1129	В

350	AlaGlyGlyMetValHisHisArgHisArgSerSerThrArgSerGlyGlyGlyAsp :	331	Оу
Ñ	O.	3229	Db
330	Gly	330	Qy
3228	CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTG	3169	Db
329		329	νδ
3168	ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	3109	. Db
329		329	Оу
3108	TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC	3049	Db
329		329	Оу
3048	GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGCTCAAATGT	2989	שמ
329		329	Qy
2988	GGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGACCTGCTGGAÁAAGGGG	2929	Db
329		329	νo
2928	TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT 2	2869	. Db
329		329	Qy
2868	GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG	2809	Db
329		329	Qy
2808	GTCAAAATTACAGACTTCGGGCTGGCTGGCTGGACATTGACGAGACAGAGTACCAT	. 2749	dd
329		329	. оу
2748	GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT	2689	, Db
329		329	Оу
2688	TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 2	2629	מם
329		329	Qy
2628	CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC 2	2569	da
329	:	329	Qy
2568	TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2	2509	ф
329	3	329	Qy
2508	ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 2	2449	מם
329	3	329	Оу
2448	TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2	2389	Db
329	3	329	Qy
2388	GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2	2329	Db
329	3	329	Qy
2328	CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2	2269	Db
329	3	329	Оу

```
; LENGTH: 4473
; TYPE: DNA
; ORGANISM: Homo :
US-09-056-105-26
                                                                                TITLE OF INVENTION: VACCINES WITH ENHANCED I
TITLE OF INVENTION: PROCESSING
FILE REFERENCE: 233/221
CURRENT APPLICATION NUMBER: US/09/056,105
CURRENT FILING DATE: 1998-04-06
EARLIER APPLICATION UMBER: 60/043,467
EARLIER FILING DATE: 1997-04-10
NUMBER OF SEQ ID NOS: 35
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 26
LENGTH: 4473
                               Alignment
Pred. No.:
Score:
 Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                        RESULT 5
US-09-056-105-26
                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                       Percent Similarity:
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                        Sequence :
                                                                                                                                                                                  Sequence 26, Application Patent No. 6287569 GENERAL INFORMATION:
                                                                                                                                                                    APPLICANT: KIPPS, THOMAS APPLICANT: WU, YUNQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3349
                                                                                                                                                                                                                                                             3889
                                                                                                                                                                                                                                                                                                                         3769
                                                                                                                                                                                                                                                                                                                                                       3709
                                                                                                                                                                                                                                                                                                                                                                                   3649
                                                                                                                                                                                                                                                                                                                                                                                                                                              3529
                                                                                                                                                                                                                                                                                           3829
                                                                                                                                                                                                                                                                                                                                                                                                                 3589
                                                                                                                                                                                                                                                                            531
                                                                                                                                                                                                                                                                                                         511
                                                                                                                                                                                                                                                                                                                                        491
                                                                                                                                                                                                                                                                                                                                                                    471
                                                                                                                                                                                                                                                                                                                                                                                                  451
                                                                                                                                                                                                                                                                                                                                                                                                                               431
                                                                                                                                                                                                                                                                                                                                                                                                                                                             411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     351
                                                                                                                                                                                                                               AlaArgSerProSerPro
||| ||||||||||
ACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                       Scores:
                                                                                                                                                                                                                                                                    GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                       TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASnLeuTyrTypAspGlnAspProProGluArgGlyAlaProProSerThrPheLys
                                                                                                                                                                                                                                                                                                                                                                                                                TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCGAGAGGGCCCCTCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAGCCTCCCCACACATGACCCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGTA
                                                                                                                                                                                                                                                            GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA-----
                                                                    sapiens
 1.45e-160
2418.00
41:06%
40.67%
64.67%
                                                                                                                                                                                                  us/09056105
                                                                                                                                                                           G
                                                                                                                                                             ENHANCED
Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                             INTRACELLULAR
 4473
523
5
22
736
                                                                                                                                                                                                                                                             -GTGTGA
                                                                                                                                                                                                                                                                                          3888
                                                                                                                                                                                                                                                                                                                        3828
                                                                                                                                                                                                                                                                                                                                                      3768
                                                                                                                                                                                                                                                                                                                                                                    490
                                                                                                                                                                                                                                                                                                                                                                                   3708
                                                                                                                                                                                                                                                                                                                                                                                                                3648
                                                                                                                                                                                                                                                                                                                                                                                                                               450
                                                                                                                                                                                                                                                                                                                                                                                                                                              3588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3408
                                                                                                                              ò
       õ
                       В
                                  γO
                                                    뫄
                                                                 QΥ
                                                                                  밁
                                                                                              Š
                                                                                                                밁
                                                                                                                                                           ρ
                                                                                                                                                                           밁
                                                                                                                                                                                        δ
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                    δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                              밁
                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                     1009
                                                                                                                                                                                                                                                                   589
                                      318
                                                                                   949
                                                                                                                 889
                                                                                                                                              829
                                                                                                                                                                                                                                       649
                                                                                                                                                                                                                                                                                                  529
                                                                                                                                                                                                                                                                                                                                469
                                                                                                                                                                                                                                                                                                                                                             409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                118
                                                                                                 278
                                                                                                                              258
                                                                                                                                                            238
                                                                                                                                                                           769
                                                                                                                                                                                          218
                                                                                                                                                                                                         709
                                                                                                                                                                                                                        198
                                                                                                                                                                                                                                                     178
                                                                                                                                                                                                                                                                                  158
                                                                                                                                                                                                                                                                                                                 138
                                                                                                                                                                                                                                                                                                                                              118
                                                                                                                                                                                                                                                                                                                                                                                          349
                                                                                                                                                                                                                                                                                                                                                                                                                        289
                                                                                                                                                                                                                                                                                                                                                                                                                                                     229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  178
                                                                                                                                                                                                                                                                                                                                                                          98
                                                                                                                                                                                                                                                                                                                                                                                                         78
                                                                                                                                                                                                                                                                                                                                                                                                                                      58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N
```

```
US-09-821-883-2 (1-690)
                                                                                                                PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla
                                                                                                                                                                                                                                          AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspIleGlanaspI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CysProTyrAsnTyrLeuSerThrAspValGlySer----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHlsProCysSerProMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValVaLGlnGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ArgAlaAlaProLeuLeuAlaArgAla---
TGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCCACCCCTGTTCTCCGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGGTGCAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCTGGCGGCCTTGTGCCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             x US-09-056-105-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -GGGCTCCTCCTCGCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1-4473)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AlaSerLeuSerLeuGly
                                                                                                                         1068
                                                                                                                                                                                                                                                1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      177
                                                                                                                                                                                   317
                                                                                                                                                                                                                                                                                                                                                                       948
                                                                                                                                                                                                                                                                                                                                                                                                                                277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37
                                                            329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217
```

₽

В

δ

	3GAG 2268	2209 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG
Db 3289 GCTGGGGCATGCTCCACCACGGCACCTCATCTACCAGGACTGGCGTUGGGAC 3348		
Qy 331 AlaG1yG1yMetValHisHisArgHisArgSerSerSerShrArgSerG1yG1yG1yAsp 350	329	329
3229 GATECTEAGGAGTATETEGTACEEERGEAGGETTETTETGTEEAGAEEETGEEECEGGE	ACGG 2208	2149 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG
	329	329
Ov 330Gly 330	36T6 2148	2003 GHCHHGGGCIGCCCGCCGHGCHGHGHGHCCHACCCICIGACGICCHICHICICIGCGGIG
Db 3169 CCCTTGGACAGCACCTTCTACCGCTCACTGGTGGAGGACGATGACATGGGGGACCTGGTG 3228		
Qy 329	329	329
3109 ATGSCCAGGGCCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	3GAT 2088	2029 GAGGAGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT
では、このでは、このでは、このでは、このでは、このでは、このでは、このでは、この	329	329
Qy 329 329		1909 COCTOCCCCMOCODIBIONANCCIONCCICTICTINCNIOCCCMICIOGANGITICCAGNI
Db 3049 TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC 3108		
Oy 329		329
2989 GAGUGGUTGUCUCUCAGUUUUATUTTGATGATGATGATGATGATGAAATGT	3GCC 1968	1909 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT
	329	329
Qy 329 329		1047 CACIBILIBECBIBECACECIBABIBICABECECCABAATBBECTCABTBACETBITTTBBA
Db 2929 GGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG 2988		
Qy 329 329	329	329
11CACCCACCAGAGIGAIGGIGGAGIIAIGGIGIGACIGIGIGGGAGCIGAIGACIII 2320	CAGG 1848	1789 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG
COCO BECACOCACOACOACAGECECACOECACOECACOECACOEC	329	329
Qy 329 329		****
Db 2809 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTECGCCGGCGG 2868	700 1700	1739 CAPTROTTOROGRAPOACACTOROGRAPACACTOROG
Qy 329 329	329	329
	AGGG 1728	1669 CGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG
Db 2749 GTCAAAATTACAGACTTCGGGCTGGCTGGTTGGACATTTGACGAGACAGAGTACCAT 2808	329	3 & 9
Оу 329 329		
Db 2689 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 2748	CAAC 1668	1609 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC
QY 349	329	329
	3CAC 1608	1549 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCACC
7679 ТООО АССТОТОВОТОВ В СТОТЕТЬТО В СТОТЕТЬТОВ В СТОТОВ	329	329
Qy 329 329		
Db 2569 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGACGCCTGGGC 2628		ერი დენებილებები განებილები განებილებები და განები განები განები განები განები განები განები განები განები გან
Оу 329 329	329	329
TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA	CAAT 1488	1429 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATTCTGCACAAT
QY 329	329	329
2449 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC	CAGC 1428	1369 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC
47 329	329	329
3) D	CCAA 1368	1309 GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG
2389 TGGATCCCTGATGGGGAAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC	329	329
Qy 329 329		1249 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG
Db 2329 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGGTCTACAAGGGCATC 2388		
Qy 329 329		
Db 2269 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2328		1189 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT
129	329	329
000000000000000000000000000000000000000	CTGT 1188	1129 AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT
		:

B 8

Ş

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                 RESULT 6
US-08-625-101-1
                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                   Sequence 1, Application US/08625101

Patent NO. 5869445

GENERAL INFORMATION:
APPLICANT: Cheever, Martin A.
APPLICANT: Cheever, Martin A.
APPLICANT: Disis, Mary L.

TITLE OF INVENTION: COMPOUNDS FOR ELICITING OR ENHANCING IMMUNE
TITLE OF INVENTION: REACTIVITY TO HER-2/neu PROTEIN FOR PREVENTION
TITLE OF INVENTION: OR TREATMENT OF MALIGNANCIES IN WHICH THE HER-2
TITLE OF INVENTION: OR TREATMENT OF MALIGNANCIES IN WHICH THE HER-2

TITLE OF INVENTION: OR TREATMENT OF MALIGNANCIES IN WHICH THE HER-2
                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3349
                                                                                                                                                             NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BE
STREET: 6300 Columbia
                                                                                                                                                                                                                                                                                                                                                                                               3889
                                                                                                                                                                                                                                                                                                                                                                                                                                           3829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3529
                                                                                                                                                                                                                                                                                                                                                                                                                    531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        351
         APPLICATION NUMBER: FILING DATE: 01-APPLICATION: 424
                                                                                                                                    STREET: 6300 Colur
CITY: Seattle
STATE: Washington
                                                                                                                 ZIP: 98104-7092
                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaArgSerProSerPro 556
                                                                                                                                                                                                                                                                                                                                                                                                         GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAAGCCTCCCCACACATGACCCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCCACAGTA
                                                                                                                                                                                                                                                                                                                                                   ACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                               GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA-----GTGTGA 3942
                                                                                                                                                                                                                                                                                                                                                                                                                                         AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCCAGAGGGGCCCTCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAA
 INFORMATION
                      01-APR-1996
                                                                                                                                                             1 BERRY LLP
bia Center,
                                  US/08/625,101
                                                                                                                                                                701
                                                                                                                                                              Fifth
                                                                                                                                                              Avenue
                                                                                                                                                                                                                      HER-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3588
                                                                                                                                                                                                                                                                                                                                                                                                                                          3888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred.
         δÃ
                                 밁
                                                      Š
                                                                             밁
                                                                                                  Š
                                                                                                                            밁
                                                                                                                                               δÃ
                                                                                                                                                                        В
                                                                                                                                                                                             Š
                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; NAME/KEY:
; LOCATION:
US-08-625-101-1
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-821-883-2 (1-690) x US-08-625-101-1 (1-3768)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: Single
TOPOLOGY: linear
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (206) 682-6031 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 920
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Х
..
            255
                                  646
                                                                              586
                                                                                                     215
                                                                                                                             526
                                                                                                                                                                         466
                                                                                                                                                                                                                      406
                                                                                                                                                                                                                                                                    346
                                                                                                                                                                                                                                                                                                                                       115
                                                        235
                                                                                                                                                                                               175
                                                                                                                                                                                                                                                                                                                                                             226
                                                                                                                                                                                                                                                                                                                                                                                                        166
                                                                                                                                                                                                                                                                                                                                                                                                                                                     106
                                                                                                                                                  195
                                                                                                                                                                                                                                            155
                                                                                                                                                                                                                                                                                                               286
                                                                                                                                                                                                                                                                                                                                                                                                                              75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95
CysHisGluGlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCys
                                             ThrArgThrValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCys
                                                                              ValLeuAspAsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGly
                                                                                                                                                                                                                                                                                                                            LeuGlnArgLeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAla
                                                                                                                                                                                                                                                                                                                                                                      AspIleGlnGluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGCCCCCCGGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTC
                                  GTGCTAGACAATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCCTCCCCAGGA
                                                                                                                                                                                                                                                                                                               CTGCAGAGGCTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCC
                                                                                                                                                                                                                                                                                                                                                             GATATCCAGGAGGTGCAGGGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sharkey, Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1..3765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8.72e-160
2405.50
41.08%
41.08%
64.34%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  920010.448C7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
```

225

165

105

134

285

154 405

174 465 194

705

274

ð

ş

õ

В

Ş

В Q 밁 Š

밁

b 2866 GTCAAATGTTGGATGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAA 2925		1786 ТСССТСССССССССССССССССССССССССССССССС
		329 329
מחום שהתהחשששששחשששש בשרכיינים ביינים		1726 TGTTTTGGACCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT
2905 CXXXXXCCCCCCXCCCCCCCCCCCCCCCCCCCCCCCC	- S	329 329
329		1666 AATGCCAGGCACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACC 1725
27	ם מ	329 329
329	Qy	1606 CGGGGCCAGGAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTG 1665
b 2686 CGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTG 2745	bb	
у 329 329	γO	0.000 0.000
b 2626 GAGTACCATGCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTC 2685	dd	中でものであっている。このでは、そのようなものような、このできない。というないのならない。これでは、このものできない。このできない。このできない。このできない。このできない。このできない。このできない
329 329	Qy	329 329
2566 CCCAACCATGTCAAAATTACAGACTTCGGGCTGGCTGGGCTGGTGGACATTGACGAGACA	dd	ACTGCCAACCGGCCAGAGGACGAGTGTGTGGGGCGAGGGGCCTGGCCTGCCAGCTGTGC 1
y 329 329	Qy	329
2506 CTGGAGGATGTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGT 2565	dd b	TTCGTGCACACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCAC
y 329 329	, , , oy	329
o 2446 CGCCTGGGCTCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGGATGAGCTAC 2505		1366 CGCTCACTGAGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGC 1425
329	γ	329 329
2386 CTGGTGACACAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGA	) E	1306 CTGCACAATGGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG
		329 329
220		1246 CCGGACAGCCTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATT 1305
2326 GGTGTGGGCTCCCCATATGTCTCCCGGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAG 2385		529
7 329 329	Оу	
2266 AGGGAAAACACATCCCCCAAAGCCAACAAAGAATCTTAGACGAAGCATACGTGATGGCT 2325	. da	CAGCTCCAAGTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTTATACATCTCAGCATGG 1
329 329		329
2206 AAGGGCATCTGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTG		1126 TTTCTGCCGGAGAGCTTTGATGGGGACCCCAGCCTCCAACACTGCCCCGCTCCAGCCAG
	2 29	329 329
**************************************		1066 GTTACCAGTGCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCA 1125
2146 PAROMONOMONACIONAL DE LA COMPANACIONAL COMPONACIONAL DE CONTROLA CONTR	D .	329 329
329 329	Oy	1006 AAGCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCA 1065
2086 CTGGTGGAGCCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTG 2145 :		329
7 329 329		CCCCTGCACAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGC
2026 AAGCGACGGCAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAG 2085	dū	
7 329 329	. Оу	
1966 TCTGCGGTGGTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATC 2025	Db	
329 329	. Qy	ValThralaCvsProTvrAsnTvrLeuSerThraspValGlvSer
1906 GACCTGGATGACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCATC 1965	da	R26 ACAGADAAGTTTGAAGTCCAATGCCCAATGCACAGACAGTTATAACATTTCAGCACAGTTAT 885
329 329	γο	######################################
1846 TTTCCAGATGAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCCACTCCTGTGTG 1905	дь	2/2
329 329	γ	
	_	

밁

S

#

```
US-08-356-786-1
                                                                                                                                           ; Sequence 1, Application U
; Patent No. 5877305
; GENERAL INFORMATION:
APPLICANT: HUSTON, JE
APPLICANT: Oppermann,
                NUMBER OF SEVERNESS:
CORRESPONDENCE ADDRESS:
ADDRESSE: Edmund R. Pitcher, Testa, Hurwitz,
ADDRESSE: Stande Place, 53 State Street .
                                                                     TITLE OF INVENTION: Biosynthetic TITLE OF INVENTION: Marker NUMBER OF SEQUENCES: 16
                                                                                                                                                                                                                                                                                                                       3646
                                                                                                                                                                                                                                                                                                                                                                                3586
                                                                                                                                                                                                                                                                                                                                                                                                                                         3526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2926
                                                                                                                                                                                                                                                                 3706
                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3046 GACCTGGTGGATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 348
                                                                                                                                                                                                                                                                                                                                                    508
                                                                                                                                                                                                                                                                                                                                                                                                             488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                            AlaPheAspAsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSer 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlyLysAsnGlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GlnProGluTyrValAsnGlnProAspValArgProGlnProProSerProArgGluGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlyGlyAspLeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTCTGCCTGCCGACCTGCTGGTGCCACTCTGGAAAGGCCCAAGACTCTCTCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCCTGAATATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCCGAGAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaProSerGluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCCCGGGCGCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----GlyAlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGCCAGTCCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCTCCCGCATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGAAGAATGGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCACCCTCCGAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTGGGGACCTGACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCCAGGTCTCCACTG
               Boston
   Massachusetts
                                                                                                                  Ring, David B.
                                                                                                                            Oppermann, Hermann
Houston, L. L.
                                                                                                                                                              Huston, James S.
                                                                                                                                                                                                      US/08356786
                                                                                                   Binding
                                                                                                   Protein
                                                                                                   for
                                           Thibeault
                                                                                                                                                                                                                                                              3762
                                                                                                                                                                                                                                                                                         546
                                                                                                                                                                                                                                                                                                                       3705
                                                                                                                                                                                                                                                                                                                                                                               3645
                                                                                                                                                                                                                                                                                                                                                                                                                                      3585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                    밁
                                                                                                             õ
                                                                                                                                           밁
                                                                                                                                                                       Q
                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                       Š
 Š
                            밁
                                                    õ
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-821-883-2 (1-690) x US-08-356-786-1 (1-3768)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (617) 248-71 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/831
FILING DATE: 06-FEB-1992
ATTORNEY/AGENT INFORMATION:
NAME: P1tcher, Edmund R.
REGISTRATION NUMBER: 27,83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REGISTRATION NUMBER: 27,829
REFERENCE/DOCKET NUMBER: CRITELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear MOLECULE TYPE: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                    346
                                                                                                                  135
                                                                                                                                             286
                                                                                                                                                                        115
                                                                                                                                                                                                      226
                                                         155
                                                                                                                                                                                                                                                              166
                                                                                                                                                                                                                                                                                                                       106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY:
                                                                                                                                                                                                                                 95
                                                                                                                                                                                                                                                                                         75
                                                                                                                                                                                                                                                                                                                                                 55
                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 3768 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE:
GlnArgAsnProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLys 194
                                           GlyLeuArgGluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIle
                                                                                                    ValLeuAspAsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGly
                                                                                                                                                            LeuGlnArgLeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAla
                                                                                                                                                                                                   GTGCTAGACAATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCAGGA
                                                                                                                                              CTGCAGAGGCTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCC
                                                                                                                                                                                                                                                                                                                                                 ProAlaSerProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnVal
                              GGCCTGCGGGAGCTGCAGCTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
3768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          248-7100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8.72e-160
2405.50
41.08%
41.08%
64.34%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/356,786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07/831,967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CRP-053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "product - "cerB-b2""
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Version
```

3768 509

بر د

Š

밁 S 밁 Ş 밁 õ 밁 á 밁 õ 밁 Ş 밁 ş 밁 Ş 밁 Ş 밁 õ 밁

밁 S 밁 Ş 밁

174 405 154 345 134 285 114

465

94. 165

225

105

2626	В		29 329	Оу 32
329	Qy		ACTRICCAACCRECCAGAGGACGAGTGTGTGGGCGAAGGGCCTGCCCACCAGCTGTGC	
2566	Дb			
329	Qy	_		
2506	Db.		A JOEGE STANDER A DE CELOS REPONTES EN CONTRACES DE LA CONTRACE DE LA CONTRACE DE LA CONTRACE DE LA CONTRACE DE	_
329	Qy			
2446	Db		CGCTCACTGAGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGC	_
329	Qy			Оу 329
2386 (	Дb	-	CTGCACAATGGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	_
329	Qy		29 329	Оу 329
2326	рb		46 CCGGACAGCCTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATT 1305	Db 1246
329	Ογ	. •	29 329	Оу 329
2266		:	B6 CAGCTCCAAGTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGG 1245	Db 1186
329	. V	•	29 329	Qу 329
2206	ם י		26 TITCTGCCGGAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCGCTCCAGCCAG	Db 1126
222	. 5		29 329	Оу 329
2146	) [		56 GTTACCAGTGCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGGAGCCTGGCA 1125	Db 1066
21.6	; Ş		29 329	Оу 329
	? 5		06 AAGCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCA 1065	Db 1006
2006	p		29 329	Оу 329
020	) [		46 CCCCTGCACAACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGC 1005	Db 946
3606	g 5		29 329	Оу 329
320				Db 886
1066	; Ş	• . •	15 ValThrAlaCysProTyrAsnTyrLeuSerThrAspValGlySer 329	Оу 315
1906	Db	٠		Db 826
329	Ş. Ş		95 ThrAspThrPheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCys 314	Qy 295
1846	, pp			
329	οу .		LeuHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsn	
1786	рь			Db 706
329	Qy		w.o.	
1726	Дb			Dh 646
329	Qy		# ************************************	
1666 /	Db		LS SEPPIOMECCYSLYSGIYSERAIGCYSTIPGIYSTUGLISERSERGILASPCYSGINSERLEU 234 	Oy 215
329	Qy		חוירחוירושרושהושהודורורשה ושתוחשה ההרשה החוירו הששה הרושה ההרבו הו	
1606 (	. Db		ASIASIGINLEUA.BLEUTINLEUITEARPTNIASIAIGSERAIGATAGYSH18FTCCYS	
329 .	Оу		CAGUGGAACUUCAGCTUTGUTACCAGGACACGATTTTGTGGAAGGACATUTTCCACAAG	
1546 (	Db	_		

2685	626 GAGTACCATGCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTC	N	В
329	329		Qy
2625	566 CCCAACCATGTCAAAATTACAGACTTCGGGCTGGCTGGCT	N	ДD
329	329		Qγ
2565	2506 CTGGAGGATGTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGT		Db
329	329		Qy
2505	2446 CGCCTGGGCTCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTAC		da
.29	329		Qy
2445	2386 CTGGTGACACAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGA		Db
329	329		Оу
2385	2326 GGTGTGGGCTCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAG		рb
329	329		
2325	2266 AGGGAAAACACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCT		Дb
329	329		Qy
2265	2206 AAGGGCATCTGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTG		ДD
329	329		Qy
2205	2146 AAAGAGACGGAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTAC		Дb
329	329		Qy
2145	2086 CTGGTGGAGCCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTG		da
329	329		Оу
2085	2026 AAGCGACGGCAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAG		ДD
329	329		· Qy
2025	1966 TCTGCGGTGGTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATC		Db
329	329		γΩ
1965	1906 GACCTGGATGACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCATC		. Db
329	329		Qy
1905	1846 TTTCCAGATGAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTG		ДD
329	329	•	Оу
1845	1786 TGCGTGGCCCGCTGCCCCAGCGGTGTGAAACCTGACCTCCTACATGCCCATCTGGAAG		Db
329	329		Qγ
1785	1726 TGTTTTGGACCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCCTCCCT		ф
329	329		Qy
1725	1666 AATGCCAGGCACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACC		Дb
329	329		Qγ
1665	1606 CGGGGCCAGGAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTG		Д
329	329		Qy
1605	1546 GCCCGAGGGCACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTT :		ДĎ

```
3706
                                      3646
                                                                            3586
                                                                                                                  3526
                                                                                                                                                      3466
                                                                                                                                                                                           3406
                                                                                                                                                                                                                                3346
                                                                                                                                                                                                                                                                     3286
                                                                                                                                                                                                                                                                                                          3226
                                                                                                                                                                                                                                                                                                                                               3166
                                                                                                                                                                                                                                                                                                                                                                                  3106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2806
                                                                                                                                                                                                                                                                                                                                                                                                                      3046 GACCTGGTGGATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCT 3105
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2986 CCAGCCAGTCCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2926 TTCTCCCGCATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2686 CGCCGGCGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTG
                                                         508
                                                                                               488
                                                                                                                                   468
                                                                                                                                                                        448
                                                                                                                                                                                                              428
                                                                                                                                                                                                                                                   408
                                                                                                                                                                                                                                                                                                                           368
                                                                                                                                                                                                                                                                                                                                                                348
                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                        388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                         GTCAAATGTTGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAA
AlaPheAspAsnLeuTyrTrpAspGlnAspProProGluArgGlyAlaProProSer 527
                                                                                                                          GlyLysAsnGlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGlu
                                                                                                                                                   GCCCCGGGCGCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGC
                                                                                                                GGGAAGAATGGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAAGGGGGGAGCGGCTGCCCCAGCCCCCATCTGCACCCATTGATGTCTACATGATCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGACTTTTGGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGACCTGCTG
                                      GCCTTCGACAACCTCTATTACTGGGACCAGGACCCACCAGAGCGGGGGGGCTCCACCCAGC
                                                                                                                                                                                                                                                                                                                                                                                            -GlyAlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGly
                                                                                                                                                                                                                                                                                                                                                                                                                                          -----
3762
                                                                                                                                                                      467
                                                                                                                                                                                                            447
                                                                           3645
                                                                                                                                                                                                                                                                                                                                                                                                                                                          3045
                                      3705
                                                                                                                3585
                                                                                                                                                     3525
                                                                                                                                                                                          3465
                                                                                                                                                                                                                               3405
                                                                                                                                                                                                                                                                     3345
                                                                                                                                                                                                                                                                                                         3285
                                                                                                                                                                                                                                                                                                                        387
                                                                                                                                                                                                                                                                                                                                             3225
                                                                                                                                                                                                                                                                                                                                                                                 3165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2865
                                                                                             507
                                                                                                                                   487
                                                                                                                                                                                                                                                 427
                                                                                                                                                                                                                                                                                       407
                                                                                                                                                                                                                                                                                                                                                               367
                                                                                                                                                                                                                                                                                                                                                                                                   347
                                                                                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
               Q
                                     В
                                                     ρ
                                                                          Вþ
                                                                                           Ş
                                                                                                               망
                                                                                                                                 Š
                                                                                                                                                                        DB:
```

5 8 5

맑

밁

õ

밁

Ş

밁

õ

B

₽

밁

몽

```
몽
                                                                                                                                                                                                                                            US-09-821-883-2 (1-690) x US-09-146-283-3 (1-2385)
                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                        Query Match:
                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-146-283-3
                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                 US-09-146-283-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Application Patent No. 5976546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 650-324-0960
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 2385 base pair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION UMBER: US/09/146
FILING DATE: 03-SEPT-1998
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
REGISTRATION NUMBER: 42,702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: W. Hongyu
APPLICANT: W. Hongyu
TITLE OF INVENTION: Immunostimulatory Compositions
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
ADDRESSEE: ADDRESSEE: Dehlinger & Associates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 76
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-324-0880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                           ANTI-SENSE: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                        116
 236
                                                             176
                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: homo sapiens INDIVIDUAL ISOLATE: GM-CSF-HER-2 fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 2385 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: US
ZIP: 94306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Deniing...
correct: 350 Cambridge Ave.
                               95
                                                                                         75
                                                                                                                                                    55
                                                                                                                                                                                  56 TTGCCCCCGGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTC
                                                                                                                                                                                                  TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 350 Came
CITY: Palo Alto
ValGlnGlyAsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGln
                                                             CCTGCCAGTCCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTG
                                                                                                                                      ProAlaSerProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGiyCysGlnVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ruegg, Curtis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Laus, Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA (genomic)
                                                                                                                                                                                                                                                                                      9.99e-150
2258.50
64.59%
62.18%
60.40%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/09146283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/09/146,283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7636-0010
                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                          Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 21
                                                                                                                                                                                                                                                                                                                                                                                                               gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #1.25
                                                                                                                                                                                                                                                                          2385
490
19
126
126
154
                                                                                                                                                                                                                                                                                                                                                                                                              F1g.
                                                                                                                                                                                                                                                                                                                                                                                                                 œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            74
                                                                                         94
                                                                                                                        175
                                                                                                                                                                                  115
                                                             235
                                                                                                                                                                                                              54
```

Ş	2 8	} &	, 5	ş 2	9	Qy	0	5	?	물 :	Q V	₽	Qy	Дb	ð	ğ	Qy	Db	Qy	Db	οy	DЬ	Q	B .	οy	B 5	2	3 5	2 8	B 2	O <sub>V</sub>	₽ '	Ş	용 .	Q	B
409		1309	1230	386	1190	372				1073	342	1016	330	956	329	896	315	836	295	776	275	716		656	235	596	, (	7 F					155			296
	######################################			laAlaLysGlyLeuGlnSerLeuProThrHisAspProSerProLeuGln	CCAGAGCAGCTCCAAGTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCA 1249	GlyAlaGlySerAspValPheAsp······GlyAspLeuGlyMetGly 385	GCATTT CTGCCGGAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAG 1189					AAGCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGG 1072	GlyAlaGlyGlyMetValHisHisArgHisArgSer 341	CCCCTGCACAACCAAGAGGTGACAGCAGGAGGATGGAACACAGCGGTGTGAGAAGTGCAGC 1015	329	GTGACTGCCTGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGC 955	ValThrAlaCysProTyrAsnTyrLeuSerThrAspValGlySer 329	ACAGACACGTTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGT 895	ThrAspThrPheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCys 314	CTCCACTTCAACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAAC 835	LeuHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsn 294	TGCCATGAGCAGTGTGCTGCCGGCTGCACGGGCCCCAAGCACTCTGACTGCCTGGCCTGC 775				TCTCCGATGTGTAAGGCCTCCCGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGCCTG 655				CARGOGGAAGCCCCACCTCTCCTACCAGGACAGCATTTTTTTTTT				GTGCTAGACAATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCCAGGA 415		
										•												•	:				•		-							
_							-																		•			-								
30-SD	RESULT	Фb	ρ	Db !	OV V	B :	Ş	Db	ν	Db	οy	D	Ç	Db		2 5	} 5		3 5	00	Qy	g D	Qy	Db	. Qy	Db	γQ	Дb	Qy	Dъ	Qy	Дb	Qy	Db	Qy	Db
79-	, "	2356 (	675	σ	655		635	2176	615	2116	595	2056					,	, 0		2 8			495	1708	483	1648	474	1588	464	1543	444	1486	432		415	1369
823A-3		 GTGAGAC	uGlyAla	AGAGAACC	sGluAsn	CTGCCCTC	sCysPro	GGGCAGCG	gGlySer	TGACCTC	eAspLeuC	CCTGAGT		CCCCAGO		rDroser		TIGULU		TGACCTC	oALaPhe 	CTGTGCC	AlaAlaP 	GTGTCAG	ValGluAs	ACTGCAG		CCAGTGT	ThrLeu-	CCA	ProArgG	TCTG	ValAsnG	CCTCTGC		GGGGCTG

		377	uGlyAlaProProProProAla 60	675 2356	Qy Db
	675 2355	uVallleProPheAspCysTrpGluProValGlnGl 	SGluAsnLeuLysAspPhéLeuLe 	655 2296	Qy Db
	655 2295	SerCysAlaThrGlnIleIleThrPheGlüSerPheLy 	SCysProProThrProGluThrSe	635 2236	Qy Db
	635 2235	GlyProLeuThrMetMetAlaSerHisTyrLysGlnHi 	gGlySerLeuThrLysLeuLysGl	615 2176	Qy Db
	615 2175	uGlnThrArgLeuGluLeuTyrLysGlnGlyLeuAr 	eAspLeuGlnGluProThrCysLeuG 	595 2116	Qy Db
	595 2115	.uMetAsnGluThrValGluValIleSerGluMetPh 	nLeuSerArgAspThrAlaAlaGli 	2056	Qy Db
	575 2055	HisValAsnAlaIleGlnGluAlaArgArgLeuLeuAs 	rProSerThrGlnProTrpGluHi	555 1996	Qy Db
	555 1995	.uAspValProAlaAlaAlaProAlaArgSerProSe                    ACGTCCCTCGAGGCACCCGCCCGCTCGCCCAG	aGluAsnProGluTyrLeuGlyLe :::       GCAGAGAGCCAGCCCTCTG	535 1945	Qy Db
	1944	LysGlyThrProThrAl	OSETThrPhe	526 1885	Оу
•	526 1884	PASPGlnAspProProGluArgGlyAlaProPr 	oAlaPheAspAsnLeuTyrTyrTr   :::         TGACCTCTCCTACATGCCCATCTG	507 1828	Qy Db
	507 1827	ProproAlapheSerPr 	AlaAlaPro-GlnProHisPro	495 1768	Оу
	494 1767	ProGlnGlyGly	ValGluAsnProGluTyrLeuThr-          :::   ::: GTGTCAGCCCCAGAATGGCTCAGTG	483 1708	Qу рь
	482 1707	LysAspValPheAlaPheGlyGlyAla ::: ::       TGTGAATGCCAGGCACTGTTTGCCGTGCCACCCTGA	ACTGCAGGGGCTCCCCAGGGAGTA	474 1648	оу Оу
	473 1647	SerProGlyLysAsnGlyValVal	ThrLeu	464 1588	Qy Db
•	463 1587	AlaArgProAlaGlyAlaThrLeuGluArgAlaLys         GTGCGCCGAGGGCACTGCTGGGGTCCAGGGCCCAC	ProArgGluGlyProLeuProAlaA	444 1543	Qу
	443 1542	GlnProProSer	ValAsnGlnProAspValArgPro :::    TCTGCTCCACACTGCCAACCG	432 1486	Qy Db
	431 1485	:ValAlaProLeuThrCysSerProGlnProGluTyr :::	CCTCTGCTTCGTGCACACGGTGCC	415 1429	Qy Db
	1428	GGGCAGTGGACTGGGCCTCATCCACCATAACACCCA	GGGGCTGCGCTCACTGAGGGAACT	1369	Db

```
Percent Similarity:
Best Local Similarity:
Query Match:
              S
                                          밁
                                                              5
                                                                                         В
                                                                                                                 ş
                                                                                                                                              밁
                                                                                                                                                                  Ş
                                                                                                                                                                                                밁
                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                US-09-821-883-2 (1-690) x US-08-579-823A-3 (1-2385)
                                                                                                                                                                                                                                                                                                                                 Score:
                                                                                                                                                                                                                                                                                                                                           Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: homo sap:
; INDIVIDUAL ISOLATE:
US-08-579-823A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3 Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 650-324-0960
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 2385 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Laus, APPLICANT: Wu, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08
FILING DATE: 03-DEC-1998
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                     ANTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 650-324-0880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
                                     115 LeuGlnArgLeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAla 134
                                                                                                                                              116
                                                                                                                                           56
                                                                                                                                                                                                          STRANDEDNESS: do
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Judge, Linda | REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                               TTGCCCCCCGGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTC 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3, Application US/08579823A
5. 6080409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: Dehlinger & Associates
350 Cambridge Ave. Suite 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ruegg, Curtis L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Laus, Reiner
                                                                                                                                                                                                                                                                                                                                                                                           homo sapiens ISOLATE: GM-CSF-HER-2 fusion gene; Fig. 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hongyu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      double
                                                                                                                                                                                                                                                                           9.99e-150
2258.50
64.59%
62.18%
60.40%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunostimulatory Composition and Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/08/579,823A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        42,702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7636-0010
                                                                                                                                                                                                                                                                                                                             Length:
Matches:
                                                                                                                                                                                                                                                                                                   Conservative: Mismatches:
                                                                                                                                                                                                                                                                                        Indels:
                                                                                         235
                                                                                                                                             175
                                                                                                                                                                                                                       54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
```

	9 GGGGCTGCGCTCACTGAGGGAACTGGGCAGTGGACTGGCCCTCATCCATC		Db .	
414	9ThrValProLeuProSer	40	νον	
1368	9 ACGAATTCTGCACAATGGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCT		dd gd	
408	3 ······	4	<del></del>	
w			qq	
402	6 AlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerProLeuGln	<u>အ</u>	Oy	
1249		119	Db	
385	AspGlyAspLeuGlyMetGly	37	Qy	
1189	3 GCATTTCTGCCGGAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCCCTCCAG			
371	2 ThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSerGlu	35	νον	
1132	3 GCAGTTACCAGTGCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTG	. 107	фd	
351	2 SerSerThrArgSerGlyGlyGlyAspLeu	34	Qy	
1072	6 AAGCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGG	101	ф	
341	0GlyAlaGlyGlyMetValHisHisArgHisArgSer	33	Qy	
1015	6 CCCCTGCACAACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGC	95	da	
329	9	32	Оу	
955 955	6 GTGACTGCCTGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGC	89	дb	
329	5 ValThrAlaCysProTyrAsnTyrLeuSerThrAspValGlySer	31	Оу	
895	6 ACAGACACGTTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGT	83	Db	
31,4	5 ThrAspThrPheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCys	29	Qy	
835	6 CTCCACTTCAACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAAC	77	Db	
294	euHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsn	27	Оу	
775	6 TGCCATGAGCAGTGTGCTGCCGGGTGCACGGGCCCCAAGCACTCTGACTGCCTGGCCTGC	71	Db	
274	5 CysHisGluGlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCy	25	Qy	
715	6 ACGCGCACTGTCTGTGCCGGTGGCTGTGCCCCGCTGCAAGGGGGCCACTGCCCACTGC	. 65	מם	
254	5 ThrArgThrValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCy	23	Qy	
655	6 TCTCCGATGTGTAAGGGCTCCCGCTGCTGGGGAGAGTTCTGAGGATTGTCAGAGCCTG	59	Db.	
234	5 SerProMetCysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeu	21	Оу	
595	6 AACAACCAGCTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGT	53	dα	
214	5 AsnAsnGlnLeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCys	19	Оу	
w		47	90 I	
194	5 GlnArgAsnProGlnLeuCvsTvrGlnAspThrIleLeuTrpLvsAspIlePheHisLvs		ον	
7			B 4	
7	5 Glv[enAraGln[enGln[enAraSer[enThrGln[]e[en[vsGlvGlvVAl[enTle		O !	
į.			da !	
154	5 ValleuaspasnGlyaspProLeuasnAsnThrThrProValThrGlyalaSerProGly	13	0	
355	6 CTGCAGAGGCTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCC	29	da b	

```
RESULT 10
US-09-344-195-3
Sequence 3, Application US/09344195 Patent No. 6210662
                                                                                                                                                                                                           2236
                                                                                                                                                                                                                                                                                                                                      2116
                                                                                2356
                                                                                                                                             2296
                                                                                                                                                                                                                                                                          2176
                                                                                                                                                                                                                                                                                                                                                                                                      2056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         474
                                                                                                                                                                             655
                                                                                                                                                                                                                                           635
                                                                                                                                                                                                                                                                                                       615
                                                                                                                                                                                                                                                                                                                                                                      595
                                                                                                                                                                                                                                                                                                                                                                                                                                     575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGAGAGCCAGCCCTCTG-----ACGTCCCTCGAGGCACCCGCCCCCTCGCCCAG
                                                                                                                                                                                                           nLeuSerArgAspThrAlaAlaGluMetAsnGluThrValGluValIleSerGluMetPh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---TCTGCTCCACACTGCCAACCGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTG 1542
                                                                                                                                          gGlySerLeuThrLysLeuLysGlyProLeuThrMetMetAlaSerH1sTyrLysGlnH1 635
                                                                                                                                                                                                                                                                                                                                   TGACCTCCAGGAGCCGACCTGCCTACAGACCCGCCTGGAGCTGTACAAGCAGGGCCTGCG
                                                                                                                                                                                                                                                                                                                                                    eAspLeuGlnGluProThrCysLeuGlnThrArgLeuGluLeuTyrLysGlnGlyLeuAr
                                                                                                                                                                                                                                                                                                                                                                                                      CCTGAGTAGAGACACTGCTGCTGAGATGAAACAGTAGAAGTCATCTCAGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCCAGCACACACCCTGGGAGCATGTGAATGCCATCCAGGAGGCCCGGCGTCTCCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGATGACAAGGGCTGCCCCGCCGA 1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGACCTCTCCTACATGCCCATCTGG----AAGTTTCCAGATGAGGAGGGGGGCATGCCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGTGCCCACTATAAGGACCCTCCCTTCTGCGTGGCCCGCTGCCCCAGCGGTGTGAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaAlaPro-GlnProHisPro-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGGCACTGTTTGCCGTGCCACCCTGA 1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAGGAGTGCGTGGAGGAATGCCGAGT 1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ThrLeu-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLys 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ValAsnGlnProAspValArgProGln------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTCTGCTTCGTGCACACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGC---
                                                                                GTGAGACCGGCCAGATGAGGCT
                                                                                                              uGlyAlaProProProProAla
                                                                                                                                                            sGluAsnLeuLysAspPheLeuLeuValIleProPheAspCysTrpGluProValGlnG1
                                                                                                                                                                                                                                         sCysProProThrProGluThrSerCysAlaThrGlnIleIleThrPheGluSerPheLy
                                                                                                                                                                                                                                                                       rProSerThrGlnProTrpGluHisValAsnAlaIleGlnGluAlaArgArgLeuLeuAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaProAlaArgSerProSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGACCGGAGGCTGACCAGTGTGTGGC 1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----GluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGluTyr 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----CCAGCTGTGCGCCCGAGGGCACTGCTGGGGTCCAGGGCCCAC 1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----SerProGlyLysAsnGlyValVal-----
                                                                                2377
                                                                                                              682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----LysAspValPheAlaPheGlyGlyAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ------ProProAlaPheSerPr 507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----ProProSer 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              535
                                                                                                                                                                          675
                                                                                                                                                                                                           2295
                                                                                                                                                                                                                                                                                                                                                                    615
                                                                                                                                                                                                                                                                                                                                                                                                    2115
                                                                                                                                                                                                                                                                                                                                                                                                                                    595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1485
                                                                                                                                                                                                                                                                         2235
                                                                                                                                                                                                                                                                                                                                      2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2055
                  В
                                           Š
                                                                           B
                                                                                                       QΥ
                                                                                                                                          В
                                                                                                                                                                      Q
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                    Score:
                                                                                                                                                                                                                                                                                                                                                                                       Pred.
                                                                                                                                                                                                                                                                                                                                                                                   No . :
                                                                              176
                                                                                                                                            116
                                                                                                                                                                          55
                                              95
                                                                                                            75
```

밁 S 밁 S 밁 S 밁 S 밁 S 8 Š 밁 Š 밁 ð 밁 5 밁 õ 8 S В S 밁 Š 문 õ 밁 Š 밁 S В õ

```
; ORIGINAL SOURCE:
; ORGANISM: homo sapiens
; INDIVIDUAL ISOLATE: GM-C
; SEQUENCE DESCRIPTION: SEQ ID
US-09-344-195-3
                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                               US-09-821-883-2 (1-690) x US-09-344-195-3 (1-2385)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATION SYSTEM: PATENTAL
APPLICATION NUMBER: US/09/344,195
FILING DATE: 24-Jun-199
CLASSIFICATION: CUNKNOWN>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/146,283
FILING DATE: 03-SEPT-1998
ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
DATE: Judge, Linda R.
                                                                                                                                                                                                                     NAME: Judge, Linda R.
REGISTRATION NUMBER: 42,702
REFERENCE/DOCKET NUMBER: 7636-0010.
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-324-0880
TELEPAN: 650-324-0960
RMATTON EDGE STO TO THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wu, Hongyu
TITLE OF INVENTION: Immunostimulatory Compositions
NUMBER OF SEQUENCES: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: NO
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
                                                                                                                                          APPLICANT: Laus, Reiner
                                                                  GATATCCAGGAGGTGCAGGGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCA
                 AspIleGlnGluValGlnGlyTyrValLeuIleAlaHisAsnGlnValAryGlnValPro 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 350 Cambridge Ave. Suite 250 CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 94306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 2385 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ruegg, Curtis L.
                                                                                                                                                                                                                                                                                                                                                    9.99e-150
2258.50
64.59%
62.18%
60.40%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hongyu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GM-CSF-HER-2 fusion
Q ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                      Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                    Gaps:
                                                                                                                                                                                                                                                                                                                                                        Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene; Fig. 8
                                                                                                                                                                                                                         115
295
                                                                    235
                                                                                                       94
                                                                                                                                              175
```

414	09ThrValProLeuProSer	λy 40	
1368	9 ACGAATTCTGCACAATGGCGCCTACTCGCTGACCCTGCAAGGGCTGC	b 130	
408	3ArgTyrSerGluAspPro	2y 40	
		_	
402	6 AlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerPr	Σγ 38	
	0 CCAGAGCAGCTCCAAGTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCA	ეხ 119	
385	2 GlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGly	Ωy 37	
μ.	3 GCATTTCTGCCGGAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAG	11	
371	uGluProSerGluGluGluAlaProArqSerProLeuAlaProSerGlu	ду Э:	
1132	:::	10	
351	2 SerSerThrArgSerGlyGlyGlyAspLeu	Ωу 34	
1072	GCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGAGGT	10	
341	00lyAlaGlyGlyMetValHisHisArgHisArgSer	2у зз	
1015	CCTGCACAACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGC	9:	
329		Ωу 3;	
955		- -	
329	5 ValThrAlaCysProTyrAsnTyrLeuSerThrAspValGlySer	Ωу 3:	
895	GCCAGCTGT	ъ	
314	5 ThrAspThrPheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCys	N	
835 .	76 CTCCACTTCAACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAAC	7	
294	5 LeuHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsn	N	
775	16 TGCCATGACCAGTGTGCTGCCGGCTGCACGGGCCCCAAGCACTCTGACTGCCTGGCCTGC	Db 7:	
274	5 CysHisGluGlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCys	N	
715	56 ACGCGCACTGTCTGTGCCGGTGGCTGTGCCCGCTGCAAGGGGCCACTGCCCACTGACTG	Db 6:	
254	5 ThrArgThrValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCys	0у 2:	
234 655	5 SerProMetCysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeu 	Оу 2: Db 5:	
595	6 AACAACCAGCTGGCTCTCACACTGATAGACACCCACCCCTCTCGGGGCCTGCCACCCCTGT	Db 5:	
214	5 AsnAsnGlnLeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCys	Оу 19	
535	6 CAGCGGAACCCCCAGCTCTGCTACCAGGACACGATTTTGTGGGAAGGACATCTTCCACAAG	Db 4:	
194	5 GlnArgAsnProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLys		
475	6 GGCCTGCGGGAGCTGCAGCTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATC	Db 4:	
174	5 GlyLeuArgGluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIle	0у 1:	
415	6 GTGCTAGACAATGGAGACCCGCTGAACAATACCACCCTGTCACAGGGGCCTCCCCAGGA	ω	
154	alLeuAspAsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGly	<i>Q</i> y	
σi	CTGCAGAGGCTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCC	N)	
134	uGlnArgLeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAla	0у 1:	

	•	GTGAGACCGGCCAGATGAGGCT 2377	2356	DЬ
		uGlyAlaProProProAla 682	675	· Qy
	2355	AGAGAACCTGAAGGACTTTCTGCTTGTCATCCCCTTTGACTGCTGGGAGCCAGTCCAGGA	2296	дь
	675	luAsnLeuLysAspPheLeuLeuValIleProPheAspCysTrpGluNroVø	655	Qy
	2295	TGCCCTCCAACCCCGGAAACTTCCTGTGCAACCCAGATTATCACCTTTGAAAGTTTCAA	2236	Db
	655	CysProProThrProGluThrSerCysAlaThrGlnIleIleThrPheGluSerPhe	635	Оу
	635 2235	gClySerLeuThrLysLeuLysGlyProLeuThrMetMetAlaSerHisTyrLysGlnHi 	615 2176	Оy
	2175	GACCTCCAGGAGCCGACCTGCCTACAGACCCGCCTGGAGCTGTACAAGCAGGGCCTGC	2116	Db
	615	eAspLeuGlnGluProThrCysLeuGlnThrArgLeuGluLeuTyrLysGlnGlyLeuAr	595	Оу
•	2115	CCTGAGTAGAGACACTGCTGCTGAGATGAATGAAACAGTAGAAGTCATCTCAGAAATGTT	2056	Db
	5 9 S	LeuSerArgAspThrAlaAlaGluMetAsnGluThrValGluValIleSe	575	Qy
	2055	CCCCAGCACACCCCTGGGAGCATGTGAATGCCATCCAGGAGGCCCGGCCTCTCCTGAA	1996	DЪ
	575	ProSerThrGlnProTrpGluHis	555	Qy
٠.	1995		1945	Дb
•	555	uGlyLeuAspValProAlaAlaAlaProAlaArgSerPrc	535	Qy
,	1944	TTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGATGACAAGGGCTGCCCCGCCGA	1885	Db
	535	oSerThrPheLysClyThrProThrAl	526	Qy
	1884	GACCTCTCCTACATGCCCATCTGGAAGTTTCCAGATGAGGAGGGCGCATGCCAG		Db I
	526	TyrTrpAspGlnAspProProGluArgGlyAlaPro	507	Qy
-	1827		o.	pb
	507	AlaAlaPro-GlnProHisProProProAlaPheSerPr	495	Qy
	1767		1708	Db
	494	lGluAsnProGluTyrLeuThr	483	γο
	1707	ACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGGCACTGTTTGCCGTGCCACCCTGA	1648	Db
	482	ysAspValPhe	474	Qy
	1647	CCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAGGAGTGCGTGGAGGAATGCCGAGT	1588	qi
	473	uSerProGlyLysAsnGlyValVal	464	Qy
	1587	ACCAGCTGTGCG	1543	Db
	463	roArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArg	444	Qy
	1542	TCTGCTCCACACTGCCAACCGGCCAGAGGACGAGTGTGTGGGGCGAGGGCCTGGCCTG	1486	ДĎ
	443	rgPr	432	Оy
	1485	CCTCTGCTTCGTGCACACGGTGCCCTGGGAACCAGCTCTTTCGGAACCCGCACCAAGC	1429	Db
	431	oLeuThrCyss	415	Qy
	1428	GGGGCTGCGCTCACTGAGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCA	1369	DЬ

RESULT 11 US-08-229-515A-14

454

394

574 201 514

```
В
                              Ş
                                                      망
                                                                           Š
                                                                                                       밁
                                                                                                                        Š
                                                                                                                                                  B
                                                                                                                                                                        Ş
                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                             Pred
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                            US-09-821-883-2 (1-690) x US-08-229-515A-14 (1-3955)
                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 404-688-9880
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: RAZIUDDIN
APPLICANT: SARKAR, FAZLUL H
TITLE OF INVENTION: ERBB2 PROMOTER BINDING PROTEIN IN
TITLE OF INVENTION: NEOPLASTIC DISEASE
NUMBER OF SEQUENCES: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: PERRYMAN, DAVID G
REGISTRATION NUMBER: 33,438
REFERENCE/DOCKET NUMBER: 1414.608
TELECOMMUNICATION INFORMATION:
TELEPHONE: 404-688-0770
                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 3955 base pair
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                             <u>х</u>о
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 127 Pe
CITY: Atlanta
STATE: Georgia
             275
                                    103
                                                          215
                                                                                                        155
                                                                                83
                                                                                                                              63
                                                                                                                                                      95
                                                                                                                                                                            ۵
                                                                                                                                                                                                  71
                                                                                                                                                                                                                         23
                                                                                                                                                                                                                                                1
                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/O FILING DATE: 19 APR 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 30303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                      3 AlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPheLeuLeu
          GlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThrHisLeu
                                                                                                                                                                                                                       PhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAlaSerThr
                                                                                                                                                     CAAGTGTGTACCGGCACAGACATGAAGTTGCGGCTCCCTGCCAGTCCTGAGACCCACCTG
                                                                                                                                                                                                                                               GCCGCAATGATCATCATGGAGCTGGCGGCCTGGTGCCGCTGGGGGTTCCTCCTCGCCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14, Application o. 5518885
                                                                                                                                                                                                                                                                                                                                                                                                                                               H: 3955 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Georgia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: NEEDLE & RO
                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Floppy disk
                                                                                                                                                                                                                                                                                                                     4.98e-129
1968.00
35.87%
34.02%
52.63%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                & ROSENBERG
tree Street,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08229515A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/229,515A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PC
Suite
                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1200
                                                                                                                                                                                                  -CTGCCCCCGGAATCGCGGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #1.30
             334
                                   122
                                                                                                                             82
                                                                                                                                                                           62
                                                                                                                                                                                                                        42
                                                                                                       214
                                                                                                                                                    154
                                                                                                                                                                                                  94
                                                                                                                                                                                                                                               70
                                                                                                                                                                                                                                                                      22
δõ
                                           δ
                                                                                         Ş
                                                                                                                  g
                                                                                                                                      Q
                                                                                                                                                                밁
                                                                                                                                                                                                            Ъ
                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                         뫄
                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                       В
                                                                    В
                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                                                                                                                                         ρ
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                1175
                                                                                                                                                                                                                                                          1055
                       1355
                                                                                                                                                                                                             1115
                                                                                                                  1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    143
                                                                                                                                         329
                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                    875
                                                                                                                                                                                                                                                                                                                                                                                                                                                 815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           335
 329
                                              329
                                                                                            329
                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                         995
                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                       935
                                                                                                                                                                                                                                                                                                                                                                            322
                                                                                                                                                                                                                                                                                                                                                                                                                          302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACTGTTGGGGTGAGAGTCCGGAAGACTGTCAGATCTTGACTGGCACCATCTGTACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAspProLeu
                                                                                                                                                                                                                                                                                                                                                     CTGGAGGAGATCACAGGTTACCTGTACATCTCAGCATGGCCAGACAGTCTCCGTGACCTC
                                                                                                                                                                                                             GAGTTTGATGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTTTGCCGGAGAGCTTTGAT 1174
                                                                                                                                                                                                                                                          TATGGTCTGGGCATGGAGCACCTTCGAGGGGGCGAGGGCCCATCACCAGTGACAATGTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                            IleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSerMet 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTTGTGCCCGGTGCAAGGGCCGGCTGCCCACTGACTGCCGATGAGCAGTGTGCCGCA 754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGluGlnCysAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAlaGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GACAATGTCGCCGCCTCCACCCCAGGCAGCAGCCCCAGAGGGGGGCTGCGGGAGCTGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGACCCAGCTCTTTGAGGACAAGTATGCCCCTGGCTGTGCTAGACAACCGAGATCCTCAG
                       TTGACACTGCAAGGCCTGGGGATCCACTCGCTGGGGCTGCGCTCACTGCGGAGCTGGGC
                                                                                                                                                                GGGGACCCCTCCTCCGGCATTGCTCCGCTGAGGCCTGAGCAGCTCCAAGTGTTCGAAACC
                                                                                                                                                                                                                                                                                                        ACAGCTGAGGACGGAACACAGCGTTGTGAGAAATGCAGCAAGCCCTGTGCTCGAGTGTGC 1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCTGTGAGCTGCACTGCCCAGCCCTCGTCACCTACAACACAGACACCTTTGAGTCCATG
                                                                    AGTGTCTTCCAGAACCTTCGAATCATTCGGGGACGGATTCTCCACGATGGCGCGTACTCA
```

281

•

814

874

694

241

261

1114

329

329

994

329

329

1414

329

1354

1294

329

329

1234

3575 AAA	Db	23	VY 343
474 Lysi	Qy		
3515 CCT	ф	35 CCCTACGGCTGCCTTCTGGACCATGTCCGAGAACACCGACCTCGCCTAGGCTCCCAGGAC 2494	Db 2435
454 Pro	Oy		Оу 329
	Db	75 GTGTCCCGCCTCCTGGGCATCTGCCTGACATCCACAGTACAGCTGGTGACACAGCTTATG 2434	Db 2375
	2 09	29 329	Оу 329
		15 AAAGCCAACAAAGAAATTCTAGATGAAGCGTATGTGATGGCTGGTGTGGGTTCTCCGTAT 2374	Db 2315
	2 9	29 329	Оу 329
		55 GATGGGGAGAATGTGAAAATCCCCCGTGGCTATCAAGGTGTTGAGAGAAAAACACATCTCCT 2314	Db 2255
	Qy Oy	29 329	Оу 329
		95 AAGGTGAAGGTGCTTGGATCAGGAGCTTTTGGCACTGTCTACAAGGGCATCTGGATCCCA 2254	Db 2195
374 Gly:	o <sub>y</sub>	29 329	Оу 329
	Db	35 CCCAGCGGAGCAATGCCCAACCAGGCTCAGATGCGGATCCTAAAAGAGACGGAGCTAAGG 2194	Db 2135
	; Qy	29 329	Оу 329
3155 ACA	. , Db	ATCCGGAAGTATACGATGCGTAGGCTGCAGGAAACTGAGTTAGTGGAGCCGCTGACG	Db 2075
334 Met		29 329	Qу 329
	Db	15 CTGCTGTTCCTGATCTTAGTGGTGGTCGTTGGAATCCTAATCAAACGAAGGAGACAGAAG 2074	Db 2015
	Oy	29 329	оу 329
3035 AGT	, D	55 TGCCCAGCAGAGCAGAGCCAGCCCGGTGACATTCATCATTGCAACTGTAGAGGGCGTC 2014	Db 1955
	C. Cy	29 329	Оу 329
2975 GAC	Db	95 ATATGCCAGCCGTGCCCCATCAACTGCACCCACTCCTGTGTGGATCTGGATGAACGAGGC 1954	Db 1895
	z, uy	29 329	Оу 329
2915 GAC	Db	35 AGTGGTGTGAAACCGGACCTCTCCTACATGCCCCATCTGGAAGTACCCGGATGAGGAGGGC 1894	Db 1835
	Qy Oy	29 329	Оу 329
2855 CCT	Db	75 GATCAGTGTGCAGCCTGCGCCCACTACAAGGACTCGTCCTCCTGTGTGTG	Db 1775
	Qy	29 329	Оу 329
0	ρb	15 CCGTGTCACCCCGAGTGTCAGCCTCAAAACAGCTCAGAGACCTGCTTTGGATCGGAGGCT 1774	Db 1715
329	Qy		Оу 329
2735 CAG	dα	GAGGAGTGCCGAGTATGGAAGGGGCTCCCCCGGGAGTATGTGAGTGA	_
329	Qy		
2675 GGC	dd	GGGCCAGGGCCCACCCAGTGTGTCAACTGCAGTCATTTCCTTCGGGGCCAGGAGTGTGTG	_
329	Oy		
2615 ACA	Db	GACTTGTGCGTCTCGAGCGGCTTGGTCTGTAACTCACTGTGTGCCCACGGGCACTGCTGG	_
329	Qy		
2555 GTA	Db	GACCAGCTCTTCCGGAACCCACATCAGGCCCTGCTCCACAGTGGGAACCGGCCGG	_
329			
2495 CTG	dα	$15^{\circ}$ AGTGGATTGGCTCTGATTCACCGCAACGCCCATCTCTTCTTTCT	Db 1415

	6 9	474 LysaspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrProGlnGly	
	473 3574	Oy 454 ProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsnGlyValVal 4	
	453 3514		
	433 3454		
	413 3394	Qy 394 ProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrValProLeuPro 4	
	393 3334	Qy 374 GlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeu :	
	373 3274	Qy 354 GlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSerGluGlyAla :	
	353 3214	Oy 334 MetValHishrgHisArgHisArgSerSerThrArgSerGlyGlyGlyAspLeuThrLeu 3	
	333 3154	Oy 330GlyAlaGlyGly 3  Db 3095 GAGTATCTGGTGCCCCAGCAGGGATTCTTCTCCCCGGACCCTACCCCAGGCACTGGGAGC 3	
	3094	ACGCTGAA	
	329	Оу 329	
	3034	Oy 329	
	2974	2915 GACTCTGAATGTCGCCCGAGATTCCGGGAGTTGGTGTCAGAATTTTCACGTATGGCGAGG	
	329	Qy 329	
	2914	Db 2855 CCTCAGCCTCCAATCTGCACCATTGATGTCTACATGATTATGGTCAAATGTTGGATGATT ;	
	329	Оу 329	
	2854	2795 CCTTACGATGGAATCCCAGCCCGGGAGATCCCTGATTTGCTGGAGAAGGGAGAACGCCTA	
	279,4 329	Db 2735 CAGAGTGATGTGTGGAGCTATGGAGTGACTGTGTGGGAGCTGATGACTTTTGGGGCCCAAA 3	· · · · <del>-</del>
	329	29	
· ·	2734	Db 2675 GGCAAGGTGCCCATCAAATGGATGGCATTGGAATCTATTCTCAGACGCCGGTTCACCCAT :	
٠.	329	Qy 329	
	2674	Db 2615 ACAGATTTCGGGCTGGCTCGGCTGGACATTGATGAGACAGAGTACCATGCAGATGGG	
	329	Qy 329	
	2614	TCAAGATT	
	329	Oy 329	:
	2554	Db 2495 CTGCTCAACTGGTGTGTTCAGATTGCCAAGGGGATGAGCTACCTGGAGGACGTGCGGCTT :	_

.;

```
Ş
                                                 Query
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                       US-09-821-883-2 (1-690) x US-08-645-865-14 (1-3955)
                                                                          Percent Similarity:
Best Local Similari
                                                                                                   Score:
                                                                                                                        Alignment Scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-645-865-14
                                                                                                                                                    US-08-645-865-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 14, Application Patent No. 5654406 GENERAL INFORMATION:
                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: 1414.608
TELECOMMUNICATION INFORMATION:
TELEPHONE: 404-688-0770
TELEFAX: 404-688-9880
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 3955 base pairs
                                                         Local Similarity:
Match:
                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3635
                                                                                                               NO . . .
                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: PERRYMAN, DAVID G
REGISTRATION NUMBER: 33,438
BEFFEDENCE FOOCET NUMBER: 11.
                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: RAZIUDDIN
APPLICANT: SAKRAR, FAZLUL H
TITLE OF INVENTION: ERBB2 PROMOTER BINDING PROTEIN IN
TITLE OF INVENTION: NEOPLASTIC DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   554
                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE: 14 MAN CLASSIFICATION: 43
                                                                                                                                                               STRANDEDNESS: si
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Atlanta
STATE: Georgia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
 w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hisval 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaProAlaArgSer 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACTGGGACCAGAACTCATCGGAGCAGGGGCCTCCACCAAGTAACTTTGAAGGGACCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGGTC 3880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTGTGCTTTCAGAGTGGGGAAGGCCTGACTTGTGGTCTCCATCGCCACAAAGCAGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGlyThrPro
AlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPheLeuLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pro-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTGCAGAGAACCCTGAGTACCTAGGCCTGGATGTACCTGTATGAGACGTGTGCAGACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                            30303
                                                                                                                                                                                      nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              127 Peachtree Street,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         usa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NEEDLE & ROSENBERG
                                                                                                                                                                                                                                                                                                                                       14 MAY 1996
                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                           single
                                                            4.98e-129
1968.00
35.87%
34.02%
52.63%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US/08645865
                                                                                                                                                                                                                                                                                                                                                     US/08/645,865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PC
Suite 1200
                                                            Conservative: Mismatches: Indels:
                                                                                                  Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                              Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -SerProSerThrGlnProTrpGlu.
                                                                                                                                                                                                                                                                                                                                                                                #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     513
22
                                                                                                                                      뫄
                                                                                                                                                             Š
                                                                                                                                                                                       밁
                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
           S
                                     밁
                                                            Š
                                                                                     В
                                                                                                           δÃ
                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                      .875
             329
                                     995
                                                              329
                                                                                      935
                                                                                                              322
                                                                                                                                                               302
                                                                                                                                                                                       815
                                                                                                                                                                                                               282
                                                                                                                                                                                                                                       755
                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                        695
                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                                                                        635
                                                                                                                                                                                                                                                                                                                                                                 222
                                                                                                                                                                                                                                                                                                                                                                                          575
                                                                                                                                                                                                                                                                                                                                                                                                                  202
                                                                                                                                                                                                                                                                                                                                                                                                                                            515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPheAsnHisSerGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGlyAsnLeuGluLeuThr 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThrHisLeu 62
                                                                                                   TyrLeuSerThrAspValGlySer-----
                                                                                                                                      CACAACCCTGAGGGTCGCTACACCTTTGGTGCCAGCTGCGTGACCACCTGCCCCTACAAC
                                                                                                                                                     ProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyrAsn
                                                                                                                                                                                      IleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSerMet
                                                                                                                                                                                                                                                                                        GGTTGTGCCCGGTGCAAGGGCCGGCTGCCCACTGACTGCTGCCATGAGCAGTGTGCCGCA
                                                                                                                                                                                                                                                                                                     GlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGluGlnCysAlaAla
                                                                                                                                                                                                                                                                                                                                        CACTGTTGGGGTGAGAGTCCGGAAGACTGTCAGATCTTGACTGGCACCATCTGTACCAGT
                                                                                                                                                                                                                                                                                                                                                     GATATAGACACCAATCGTTCCCGGGCCTGTCCACCTTGTGCCCCCGCCTGCAAAGACAAT
                                                                                                                                                                                                                                                                                                                                                                                                       LeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGlySer
                                                                                                                                                                                                                                                                                                                                                                                                                                            TACCAGGACATGGTTTTGTGGAAGGACGTCTTCCGCAAGAATAACCAACTGGCTCCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGlnLeuAlaLeuThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAAGTCTCACAGAGATCCTGAAGGGAGGAGTTTTGATCCGTGGGAACCCTCAGCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsnProGlnLeuCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACAATGTCGCCGCCTCCACCCCAGGCAGAACCCCCAGAGGGGCTGCGGGAGCTGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACATGCTCCGCCACCTGTACCAGGGCTGTCAGGTAGTGCAGGGCAACTTGGAGCTTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGTGTGTACCGGCACAGACATGAAGTTGCGGCTCCCTGCCAGTCCTGAGACCCCACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAlaSerThr 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAGCTGAGGACGGAACACAGCGTTGTGAGAAATGCAGCAAGCCCTGTGCTCGAGTGTGC
                                                                                     TACCTGTCTACGGAAGTGGGATCCTGCACTCTGGTGTGCCCCCGAATAACCAAGAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGCCCCCGGAATCGCGGGCACC
                                                                                                                                                              321
                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                                               261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94
                                                                                       994
                                                                                                               329
                                                                                                                                      934
                                                                                                                                                                                       874
                                                                                                                                                                                                                                       814
                                                                                                                                                                                                                                                                                        754
                                                                                                                                                                                                                                                                                                                                          694
                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                          634
                                                                                                                                                                                                                                                                                                                                                                                                                   221
                                                                                                                                                                                                                                                                                                                                                                                                                                            574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            514
                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   •
```

	7		
354 GlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSerGluGlyAla 373	Qy		
	Db		329
MetValHisH1sArgHisArgSerSerSerThrArgSerGlyGlyAspLeuThrLeu	Qy		2015 CTGCTGTTCCTGATCTTAGTGGTGGTCGTTGGAATCCTAATCAAACGAAGGAGACAGAAG 2074
GAGTATCTGGTGCCCCAGCAGGGATTCTTCTCCCCGGACCCTACCCCAGGCACTGGGAGC	B .		329 329
	0 8	-	1955 TGCCCAGCAGAGCAGAGCCCAGCCCGGTGACATTCATTGCAACTGTAGAGGGCGTC 2014
акоплотельного потарать околью параменто по потарать по потарать по	D :		329 329
	 0y		1895 ATATGCCAGCCGTGCCCCATCAACTGCACCCCACTCCTGTGTGGATCTGGATGAACGAGGC 1954
2975 GACCCCCAGCGTTTTGTGGTCATCCAGAACGAGGACTTGGGCCCCATCCAGCCCCATGGAC 3034	Db		
329 329	Qy		WAT DO TO TOWARD CONTRACT OF THE WAT DO C
2915 GACTCTGAATGTCGCCCGAGATTCCGGGAGTTGGTGTCAGAATTTTCACGTATGGCGAGG 2974	Db		ひのでの でしょう かんりつ ついさい こうさい こうさい こうさい こうじゅう こうしゅう こう こうしゅう こう こうしゅう こう こうしゅう こうしゅう こう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こう こうしゅう こう
329 329	Qy		
2855 CCTCAGCCTCCAATCTGCACCATTGATGTCTACATGATTATGGTCAAATGTTGGATGATT 2914	Db		GATCAGTGTGCAGCCTGCGCCCACTACAAGGACTCGTCCTCTCTGTGTGTG
329 329	Qy		
2795 CCTTACGATGGAATCCCAGCCCGGGAGATCCCTGATTTGCTGGAGAAGGGAGAACGCCTA 2854	Db		CCGTGTCACCCCGAGTGTCAGCCTCAAAAACACCTCACACACCTTCTTTTCCAAGACCTC
329 329	Qy		329
2735 CAGAGTGATGTGTGGAGCTATGGAGTGACTGTGTGGGAGCTGATGACTTTTGGGGCCAAA 2794	DЬ		1655 GAGGAGTGCCGAGTATGGAAGGGGCTCCCCCGGGAGTATGTGAGTGA
229	Qy		329 329
GCAAGGTGCCCATCAAA1GGATGGCATTGGAATCTATTCTCAGACGCCGGTTCACCCCAT	Db		1595 GGGCCAGGGCCCACCCAGTGTGTCAACTGCAGTCATTTCCTTCGGGGGCCAGGAGTGTGTG 1654
			329 329
ACAGATTTCGGGCTGGTCGGCTGCTGGACATTGAGACAGAGTACCATGCAGATGGG	) DB		1535 GACTTGTGCGTCTCGAGCGGCTTGGTCTGTAACTCACTGTGTGCCCACGGGCACTGCTGG 1594
	! 5		329 329
370	0 8		1475 GACCAGCTCTTCCGGAACCCACATCAGGCCCTGCTCCACAGTGGGAACCGGCCGG
THADA COTTO CO	g .		329 329
329	0у		1415 AGTGGATTGGCTCTGATTCACCGCAACGCCCATCTCTGCTTTGTACACACTGTACCTTGG 1474
2495 CTGCTCAACTGGTGTGTTCAGATTGCCAAGGGGATGAGCTACCTGGAGGAÄGGTGCGGCTT 2554	Db		
329 329	Qy	ä	
2435 CCCTACGGCTGCCTTCTGGACCATGTCCGAGAACACCGAGGTCGCCTAGGCTCCCAGGAC 2494	Db		TTGACACTGCAAGGCCTGGGGATCCACTCGCTGGGGCTCACTCA
329 329	Qy		329 329
GTGTCCCGCCTCCTGGGCATCTGCCTGACATCCACAGTACAGCTGGTGACACACCTTATG	Db		1295 AGTGTCTTCCAGAACCTTCGAATCATTCGGGGACGGATTCTCCACGATGGCGCGCTACTCA 1354
	νŞ		329 329
AAAGCCAACAAAGAAATTCTAGATGAAGCGTATGTGATGGCTGTGTGTG			1235 CTGGAGGAGATCACAGGTTACCTGTACATCTCAGCATGGCCAGACAGTCTCCGTGACCTC 1294
	5		329 329
GATGGGGAGAATGTGAAAAATCCCCGTGGCTATCAAGGTGTTGAGAGAAAAAACATCTCCT GATGGGGAGAATGTGAAAAATCCCCCTTGGCTATCAAGGTGTTGAGAGAAAAAACATCTCCT	) b		1175 GGGGACCCCTCCTCCGGCATTGCTCCGCTGAGGCCTGAGCAGCTCCAAGTGTTCGAAACC 1234
	7 5		329 329
עוממן מעוומנומרו וממטור בממטמרו ווווממרות במורו במרוחר ווממטר במורו במתחור בר המחור בר	2 8		1115 GAGTTTGATGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTTTGCCGGAGAGCTTTGAT 1174
をしてしません ひとうじゅう こうさん こうさん こうさん こうさん こうさん こうさん こうさん こうじゅう はんしょう とうじゅう はんしょう とうしゅう はんしょう とうしゅう はんしょう しょうしょく しょく しょく しょく しょく しょく しょく しょく しょく しょく	Z .		329 329
329 329	OV		

음 8

밁 Š D Q

유 성

β Q

밁 δ å 8

Вþ δ ф Ş

B 8

유 양

B 5

da δô B 8

밁

Š

õ

414

3395

3575

474

3635

514

494

3515

454

3455

434

S

394

밁 S

3275

밁

3335

```
Sequence 2, Application US/08422108 Patent No. 6015567
                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 Inch, 1.44 Mb floppy
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                    SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
                                                                                                                                                                                                STREET: 460 Point San Bruno Blvd CITY: South San Francisco STATE: California COUNTRY: USA
                                                          APPLICATION NUMBER: US/08/422,108 FILING DATE: 14-Apr-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerProGlyLysAsnGlyValVal 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ThralaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaProAlaArgSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGlyThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAspAsnLeuTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlnProAspValArgProGlnProProSerProArgGluGlyProLeuProAlaAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGluTyrValAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrValProLeuPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTGTGCTTTCAGAGTGGGGAAGGCCTGACTTGTGGTCTCCATCGCCACAAAGCAGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACTGGGACCAGAACTCATCGGAGCAGGGGCCTCCACCAAGTAACTTTGAAGGGACCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCACTGCCTCTCCGCCCCACCCTTCTCCTGCCTTCAGCCCAGCCTTTGACAACCTCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAATCAGAGGTTCAGCCTCAGCCTCTTTAACCCCAGAGGGTCCTCTGCCTCCTGTCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCGAGACTGATGGCTATGTTGCTCCCCTGGCCTGCAGCCCCAGCCCCAGCTATGTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTCCACATGACCTCAGCCCTCTACAGCGGTACAGCGAGGACCCCACATTACCTCTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCTCCGATGTTTGATGGTGACCTGGCAATGGGGGTAACCAAAGGGCTGCAGAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTGCAGAGAACCCTGAGTACCTAGGCCTGGATGTACCTGTATGAGACGTGTGCAGACGT
                                                                                                                                                                                                                                                                                                                                                      Hudziak, Robert M.
                                                                                                                                                                                                                                                                                                        HER2 EXTRACELLULAR DOMAIN
                                                                                                                                                                                                                                                                                                                                      H. Michael
               08/355460
                                                                                                                                                    disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SerProSerThrGlnProTrpGlu 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                              밁
                                                       δÃ
                                                                                          밁
                                                                                                                     Qy
                                                                                                                                                    밁
                                                                                                                                                                             Q
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-821-883-2 (1-690) x US-08-422-108-2 (1-1872)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-422-108-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: 415/952-9881
TELEX: 910/371-7168
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1872 nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: 415/225-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/3:
FILING DATE: 19-MAY-1989
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                               541
                                                                                          481
                                                                                                                                                     421
                                                                                                                                                                                  181
                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                              161
                                                                                                                                                                                                                                                                                                         141
                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                            221
                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41 SerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: Nucleic Acid
STRANDEDNESS: Sing
TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REGISTRATION NUMBER:
                            SerargCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla
                                                                                                                                                                   CysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGlnLeualaLeu
                                                                                                                                                                                                              ValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAsp
                                                                                                                                                                                                                                                                                                                                                                                                 HisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGlyAsnLeuGlu
GlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGluGlnCysAla
                                                                                                         ThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGly
                                                                                                                                                                                                                                                                                            ProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGln
                                                                                                                                                                                                                                                                            CCGCUGAACAAUACCACCCCUGUCACAGGGGCCUCCCCAGGAAGGCCUGCGGGAGCUGCAG
                                                                                                                                                                                                                                                                                                                                      GUGCGAGGCACCCAGCUCUUUGAGGACAACUAUGCCCUGGCCGUGCUAGACAAUGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CACCUGGACAUGCUCCGCCACCUCUACCAGGGCUGCCAGGGUGGCAGGGAAAACCUGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCACCCAAGUGUGCACCGGCACAGACAUGAAGCUGCGGCUCCCUGCCAGUCCCGAGACC
                                                                                          ACACUGAUAGACACCAACCGCUCUCGGGCCUGCCACCCCUGUUCUCCGAUGUGUAAGGGC
                                                                                                                                                    UGCUACCAGGACACGAUUUUGUGGAAGGACAUCUUCCACAAGAACAACCAGCUGGCUCUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lee, Wendy M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1872 nucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6.44e-107
1647.00
57.68%
54.52%
44.05%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08/048346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07/354319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   00,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       554C2D2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
                               600
                                                                                                                                                                                                                                                                                                                                                                  140
                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80
 260
                                                          240
                                                                                                                                                                                  200
                                                                                                                                                                                                                420
                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                         160
                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                          540
                                                                                                                        220
                                                                                                                                                     480
```

US-08-422-108-2

GENERAL INFORMATION: APPLICANT: Hudzia

APPLICANT: Shepard, APPLICANT: Ullrich, TITLE OF INVENTION:

Shepard, Ullrich,

Axe

CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, NUMBER OF SEQUENCES:

94080

CLASSIFICATION: 435
PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/3 FILING DATE: 13-DEC-1994

밁 Š ₽ S 밁 Ş ₽ ð 용 õ 밁 õ 밁 ð 밁 á 밁

3875

AGGGTC 3880 Hisval 564

563

3815

554

3755

534

:

; INFORMATION FC ; SEQUENCE CHP	68	551 AlaArgSerProSerProSerThr-GlnProTrpGluHisValAsnAlaIleGl 56
TELECOMMUNIC TELEPHONE: TELEFAX:	550 1553	540 TyrLeuGly
ATTORNEY/AGE ; ANME: Lee ; REGISTRATI	539 1493	521 GluargGlyAlaProProSerThrPheLysGlyThrProThrAlaGluAsnProGlu 5:
FILING DAY  PRIOR APPLICATION  PRICATION  PR	520 1433	503ProAlaPheSerProAlaPheAspAsnLeuTyrTyrTrpAspGlnAspProPro 520
APPLICATIO FILING DAT PRIOR APPLICATIO	02 ·	495 AlaAlaProGlnProHisProPro
CLASSIFICA PRIOR APPLICATIO APPLICATIO FILING DA1	22	475 ASPValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGly 494
SOFTWARE: CURRENT APPRICATION FILING DAME	74	455 AlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsnGlyValValLys 474 :::
ATE SER	32	435 ProAspValArgProGlnProProSerProArgGluGlyProLeuProAlaAlaArgPro 454 :::
CITY: SOUNTRY: COUNTRY: 9408	72	428 GlnProGluTyrValAsnGln 434
SPOR	427 1113	408 ProThrValProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerPro 4:
APPLICANT:	1065	.065 10
; GENERAL INFORM ; APPLICANT:	07	388 LysGlyLeuGlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAsp 4
US-08-422-734-2 ; Sequence 2, App ; Patent No. 633		368 AlaProSerGluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAla 387
1770	367 ± ± 1014	351
Db 1740 CAGC		895 CAAGAGGUGACAGCAGAGGAUGGAACACAGCGGUGUGAGAAGUGCAGCAAGCCCUGUGCC 954
Db 1686 GUGUGUG Qy 645 aThrGlr		
Db 1635 GUGUCAO Qy 625 uThrme ;;		
Db 1615 Qy 608 uLeuTy:		
Db 1614 C Qy 588 1GluVa	öö	
Db 1554 GUGCGU	.60	

õ

og g 밁

Ş

밁

Б

```
LICATION DATA:
TION NUMBER: 08/422108
DATE: 14-Apr-1995
TION NUMBER: 08/355460
DATE: 13-DEC-1994
                                                                                                                                                                 LICATION DATA:
TION NUMBER: 07/354319
DATE: 19-MAY-198
TAGENT INFORMATION:
Lee, Wendy M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DIENCES: 2
DIENCE ADDRESS:
BE: Genentech, Inc.
BE: Genentech and Bruno Blvd
460 Point San Bruno Blvd
South San Francisco
California
ATION NUMBER: 00,000
CEC/DOCKET NUMBER: 554C
NICATION INFORMATION:
NE: 415/225-1994
: 415/952-9881
910/371-7168
FOR SEQ ID NO: 2:
CHARACTERISTICS:
                                                                                                                                                                                                                                                                         ATE: 13-LL.
ICATION DATA:
....wher: 08/048346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shepard, H. Michael
Ullrich, Axel
NVENTION: HER2 EXTRACELLULAR DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCCCCAG-----AAUGGCUCAGUGACCUGUUUU---GGACCGGAGGCUGACCA 1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : WinPatin (Genentech)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADABLE FORM:
PE: 3.5 Inch, 1.44 mb floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         oplication US/08422734
03169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JC-----UGGAAGUUUCCAGAUGAGGAGGGCGCAUGCCAGCCU 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   neAspCysTrpGlu---ProValGlnGluGlyAlaProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lnIleIleThrPheGluSerPheLysGluAsnLeuLysAspPheLeuLeuValIl 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 etMetAlaSerHisTyrLysGlnHisCysProProThrProGluThrSerCysAl 645
:: ::|||||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rLysGlnGlyLeuArgGlySerLeuThrLysLeuLysGlyPro-----Le 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alIleSerGluMetPheAspLeuGlnGluProThrCysLeuGlnThrArgLeuGl 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              laArgArgLeuLeuAsnLeuSerArgAspThrAlaAlaGluMetAsnGluThrVa 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------GGUGUGAAACCUGACCUCCCUACAU 1769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCCUGUGCCCACUAUAAGGAC-----CCUCCCUUCUGCGUGGCCCGCUGCCC 1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IGGAGGAAUGCCGAGUACUGCAGGGGCUCCCCAGGGAGUAUGUGAAUGCCAGGCA 1613
                                                                                                                                                                                                                                                                                                                                                                                                                                         ATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ON NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hudziak,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Robert M.
H. Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/422,734
                                                                                                                             554C2D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----uguuugccgugccacccuga 1634 ··
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . .
```

Percent Similarity:
Best Local Similarity:
Query Match:
DB: В Ş 밁 δÃ 밁 5 B 5 유 성 δ 밁 Ş В δÃ В δ 맑 Š Š В Ş 망 Ş В Ş В Ş Alignment Scores: Pred. No.: Score: ; LENGTH: 1872 nucleotides ; TYPE: Nucleic Acid ; STRANDEDNESS: Single ; TOPOLOGY: Linear US-08-422-734-2 В US-09-821-883-2 (1-690) x US-08-422-734-2 (1-1872) 661 601 541 181 241 321 781 301 721 281 261 241 221 481 201 421 361 161 301 141 121 181 101 121 81 61 51 4 ш ValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAsp GlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIle LeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGln AsnTyrLeuSerThrAspValGlySerGlyAlaGlyGlyMetValHisHisArgHisArg SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla CUCACCUACCUGCCCACCAAUGCCAGCCUGUCCUUCCUGCAGGAUAUCCAGGAGGUGCAG GUGCGAGGCACCCAGCUCUUUGAGGACAACUAUGCCCUGGCCGUGCUAGACAAUGGAGAC 6.44e-107 1647.00 57.68% 54.52% 44.05% Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps: 180 160 140 120 100 120 840 780 600 480 200 420 360 300 240 180 80 60 60 300 720 280 660 260 240 540 220

Qy	Db	Оу	da	Qy	Db	Оу	Db	Qy	Дb	Qy	Дb	Qy	Db	Qy	Db	Qy	Db	Qy	dd	Qy	da	νQ	Db	ρy	Db	Qy	Db	Qy	Db	Qy	Db	Оу	Db	οy	Db
625	1635	608	1615	588	1614	568	1554	551	1494	540	1434	521	1383	503	1323	495	1284	475	1233	455	1173	435	1114	428	1066	408	1065	388	1015	368	955	351	895	341	841
uThrMetMetAlaSerH1sTyrLysGlnH1sCysProProThrProGluThrSerCysAl 6	GUGUCAGCCCCAGAAUGGCUCAGUGACCUGUUUUGGACCGGAGGCUGACCA 1	uLeuTyrLysGlnGlyLeuArgGlySerLeuThrLysLeuLysGlyPro·····Le 6		${\tt lGluValIleSerGluMetPheAspLeuGlnGluProThrCysLeuGlnThrArgLeuGlnGluProThrCysLeuGlnThrArgLeuGlnGluProThrCysLeuGlnThrArgLeuGlnGluValIleGlu$	C1	nGluAlaArgArgLeuLeuAsnLeuSerArgAspThrAlaAlaGluMetAsnGluThrVa 5	GUGAAUGCCAGGCA	AlaArgSerProSerProSerThr-GlnProTrpGluH1sValAsnAlaIleGl 5	CUGCUGGGGUCCAGGGCCCACCCAGUGUGUCAACUGCAGCCAGUUCCUUCGGGGCCAGGA 1	TyrLeuGly	GCCAGAGGACGAGUGUGUGGGCGAGGGCCUGGCCACCAGCUGUGCGCCCGAGGGCA 1	GluArgGlyAlaProProSerThrPheLysGlyThrProThrAlaGluAsnProGlu 5	GGACCAGCUCUUUCGGAACCCGCACCAAGCUCUGCUCCACACUGCCAACCG 1	ProAlaPheSerProAlaPheAspAsnLeuTyrTypAspGlnAspProPro 5	CAGUGGACUGGCCCUCAUCCACCAUAACACCCCACCUCUGCUUCGUGCACACGGUGCCCUG 1	AlaAlaProGlnProHisProPro5		AspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGly 4		AlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsnGiyValValLys 4	CUCAGCAUGGCCGGACAGCCUGACCUCAGCGUCUUCCAGAACCUGCAAGUAAUCCG 1	ProAspValArgProGlnProProSerProArgGluGlyProLeuProAlaAlaArgPro 4			CUGCCGGAGAGCUUUGAUGGGGACCCAGCCUCCAACACUGCCCCGCUC 1	ProThrValProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerPro 4		LysGlyLeuGlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSer3luAsp 4	AAUAUCCAGGAGUUUGCUGGCAGCAAGAAGAUCUUUGGGAAGCCUGGCAUUU 1	lySerAspValPheAspGlyAspLeuGlyMetGlyAlaAla	CGAGUGUGCUAUGGUCUGGGCAUGGAGCACUUGCGAGAGGUGAGGGCAGUUACCAGUGCC 1	uGluProSerGluGluGluAlaProArgSerProLeu	GGUGUGAGAAGUGCAGCAAGCCCUGUGCC	SerSerSerThrArgSerGlyGlyGlyAsp 3	AACUACCUUUCUACGGACGUGGGAUCCUGCACCCUCGUCUGCCCCCUGCACAAC 8
645 .	1685	625 .	1634	608	1614	588	1613	8	1553	50 .	1493	39 .	1433 ,	520	1382 <sub>:</sub>	502	1322	494	1283	474	1232	454	1172	434	1113	427	1065	407	1065	387	1014	367	954	350	894

	CysTrpGluProValGlnGluGlyAlaProProProProAla 682 	669 1539
668 1538	IleThrPheGluSerPheLysGluAsnLeuLysAspPheLeuLeuValIleProPheAsp 	649 1479
648 1478	AlaSerHisTyrLysGlnHisCysProProThrProGluThrSerCysAlaThrGlnIle 	629 1419
628 1418	LeuTyrLysGlnGlyLeuArgGlySerLeuThrLysLeuLysGlyProLeuThrMetMet 	609 1359
608 1358	GluValIleSerGluMetPheAspLeuGlnGluProThrCysLeuGlnThrArgLeuGlu 	589 1299
588 1298	GluAlaArgArgLeuLeuAsnLeuSerArgAspThrAlaAlaGluMetAsnGluThrVal 	569 1239
568 1238	AlaProAlaArgSerProSerProSerThrGlnProTrpGluHisValAsnAlaIleGln 	549 1179
<u> </u>	CAAACAGCCATCAAGGTACTGAGGACAGTACAGATGGATC	1119
548	AlaAla	547
546 1118	LysGlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValPro	530 1065
529 1064	AspGlnAspProProGluArgGlyAlaProProSerThrPhe	516 1011
1010	:::      ::::       ::::       ::::	990
515	oProProAlaPheSerProAlaPheAspAsnLeuTyrTy	496
495 989	ValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGlyAla ::::::             TTGTACTTTGAGAAGGGGGAGTAC	476 966
	TGTTTACAACGGACTCCTTCCTCCTATGCTTCTTGCCACTTGACG	$\tilde{\Box}$
475	euGluArgAlaLysThr-LeuSerProGlyLysAsnGlyValValLysAs	456
456 916	SerProArgGluGlyProLeuProAlaAlaArgProAlaG	443 864
	CAATGAAATCCTCAATCACATGAAGAGAGCAACTCAGATACCAAGCTACAAAAAACTT	ō
442	nGlnProAspValArgProG :	426
425 803	hrValProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCys	409 744
409 743	GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProT 	391 684
390 683	AlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeu	373 627

밁

В

Q

Ş

Search completed: May 8, 2003, 14:53:52 Job time: 154 secs

THIS PAGE BLANK (uspra)

```
GenCore version 5.1.4_p5_4578 ppyright (c) 1993 - 2003 Compugen Ltd.
```

Database: EST:*  1: em_estba:* 2: em_esthum:* 3: em_estou:* 4: em_estov:* 5: em_estov:* 6: em_estpl:* 7: em_estl:* 10: gb_est1:* 11: gb_est2:* 11: gb_est3:* 12: gb_est4:* 13: gb_est4:* 15: em_estfun:* 16: em_estfun:* 17: gb_gss:* 18: em_gss_inv:* 20: em_gss_inv:* 21: em_gss_fin:* 22: em_gss_mam:* 23: em_gss_mam:* 24: em_gss_pro:* 25: em_gss_pro:* 27: em_gss_pro:*	Maximum Match Listing first nameters: n.model - DEV-x1  spool/US099218  stap - SUFFIX-p2  RT=1 - END1 - M  HT_SCORE-pct - 1 - M  -ext - HEAPSIZE  @CGN_11_2874  AP - LARGEQUERY  AF - LARGEQUERY	seqs, lsfying )000000	Title: US-09-821-883-2 Perfect score: 3739 Sequence: 1 MRAAPLLLARAASLSLGFLFEPVQEGAPPPPAAAHHHHHH 690 Scoring table: BLOSUM62 Xgapop 10.0 , Xgapext 0.5 Ygapop 10.0 , Ygapext 0.5 Fgapop 6.0 , Fgapext 7.0 Delop 6.0 , Delext 7.0	OM protein - nucleic search, using frame_plus_p2n model Run on: May 8, 2003, 12:30:24 ; Search time 2116 Seconds (without alignments) 5281.137 Million cell updates/sec	יייף אוד (ר) בספס בסיים בייים בייים בייים בייים בייים בייים בייים.
---	--	-----------------------------	---	--	--

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

										(	ລຸດ	כ				c ·	ი	c	,	O																	:	Res	
4 4 5	2 2	410	. ω 9	<u>3</u>	ນ ເ 7	טע	ω.	33	32	31	ω r 0	00	27	26	25	2	23	22	2 0	ع د ک د	18	17	16	15	14	<u>υ</u> :	3 5	10	9	8	7	σ (	OJ 1	ى د		<u>ئ</u> ر	NO.	Result	
	675				719.5			722.5	2	735	747	747 5	774.5	778.5	781.5	788.5	788.5	792.5	800	900	817	835.5	848		864.5	868	881	1060 TO60	912	915	924	976	1046	1007	1163	1288	Score	1	
0000	18.1	œ o	000	φ.	9	ې ه	o O	9	9	9	٥.	٥.	20.7	0		- 1	_ :	- :	٠:	٠.	• :-		2		ω:	ω.	٠,	4 د			4	<u>ه</u> .	<b>3</b> 0 (	۰.	٠.	٠.	; =		Þ
672 695	660	588	457	537	2936	2420	450	923	508	956	460	7 2 4	767	632	657	499	499	678	5 O	076	552	649	786	887	621	609	695	491	791	614	813	943	569	ν - L	315 7717	1016	Length		
10	10	10							0		S			0	0	N	N (	w	ء د	-	N		ω	۵	<b>N</b>	0	·	ء د	· w	0	w	4	- 4	1:	4	13	B		
BE671554 BE669962	BE218	AW207707	AW372023	BM793744	AK004944	AKU04911	AI906050	BQ888953	BE065758	AL552065	BF834727	ATODASA ATOTOS	BF984111	BB655484	BB620332	BF746304	BF746234	BI555157	BE008814	A1906012	BG277542	AA496412	BI155788	BQ717097	BG283493	AW701942	AU123871	BM/90293	BI154872	AW370693	BI557797	B0958632	AL701765	AF 310349	BM002/92	M562	10	•	COLUMNIA
BE671554 7e53h07.x BE669962 7e27g08.x	BE218982 hv47a07.x	AW207707 UI-H-BI2-	AW372023 RC2-BT031	BM793744 K-EST0074	AKOO4944 Mus muscu	30.5	r G		RC2-BT	AL552065 AL552065	BF834727 CM3-HT096	AT906364 RC-RT108-	BF984111 602307589	BB655484 BB655484	вв620332 вв620332	BF746304 RC1-BT025	BF746234 RC1-BT025	BI555157 603236396	0119-0119 CVO-CVOIA	A1906012 RC-B1105-	BG277542 ux45d07.y	AA496412 ZV37a02.r	BI155788 602904360	BQ717097 AGENCOURT	BG283493 602407782	AW701942 ug93b02.v	AU1045077 003250310	BM/90293 K-EST00/0			BI557797 603236977		DKF2p6	21349 001	310340 HOENC	62913 AG	Description		

## ALIGNMENTS

RESULT I		
LOCUS	BM562913 1016 bp mrna linear EST 20-FEB-2002	
DEFINITION	•	
•	5', mRNA sequence.	
ACCESSION	BM562913	
VERSION	BM562913.1 GI:18809393	
KEYWORDS	EST.	
SOURCE	human.	
ORGANISM	Homo sapiens	
	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	
	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.	
REFERENCE	1 (bases 1 to 1016)	
TITLE	National Institutes of Health, Mammalian Gene Collection (MGC)	

::

```
밁
                         Ş
                                                  В
                                                                     Ş
                                                                                                B
                                                                                                                     δ
                                                                                                                                                밁
                                                                                                                                                                   δ
                                                                                                                                                                                            밁
                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores: Pred. No.: Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-821-883-2 (1-690) x BM562913 (1-1016)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
     552
                                                     492
                                                                           233
                                                                                                  432
                                                                                                                          213
                                                                                                                                                  372
                                                                                                                                                                         193
                                                                                                                                                                                                 312
                                                                                                                                                                                                                         173
                                                                                                                                                                                                                                                                       153
                                                                                                                                                                                                                                                                                                192
                                                                                                                                                                                                                                                                                                                       133
                                                                                                                                                                                                                                                                                                                                               132
                                                                                                                                                                                                                                                                                                                                                                       113
                                                                                                                                                                                                                                                 252
                                                                                                                                                                                                                                                                                                                                                                                               72
                                                                                                                                                                                                                                                                                                                                                                                                                     93
                                                                                                                                                                                                                                                                                                                                           LeuIleGlnArgAsnProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePhe
                                                                                                                                                                                                                                                                                                          LeuAlaValLeuAspAsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSer
                                                                                                                                                                                                                                                                                                                                                                                          ProGlyGlyLeuArgGluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyVal
                                                                                                                                                                                              TTGATCCAGCGGAACCCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTC
                                                                                                                                                                                                                                                                                             CTGGCCGTGCTAGACAATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCTCC
                                                                                                                                                                                                                                              CCAGGAGGCCTGCGGGAGCTGCAGCTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov plate: LLMM12745 row: n column: 04 High quality sequence stop: 637.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (19)
Contact: Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="duodenal adenocarcinoma, cell line"
/lab_host="DHIOB (phage-resistant)"
/note="Organ: small intestine; Vector: pCMV-SPORT6;
Site_1: NotI; Site_2: SalI; Cloned unidirectionally;
oligo-dT primed. Average insert size 1.767 kb. Library
enriched for full-length clones and constructed by Life
Technologies. Note: this is a NIH_MGC Library."
a 322 c 278 g 198 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:5736771"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        clone_lib="NIH_MGC_88"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3.41e-92
1288.00
84.03%
80.83%
34.45%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (1999)
bert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
  611
                          272
                                                                         252
                                                                                                 491
                                                                                                                                                431
                                                                                                                                                                                                                      192
                                                                                                                                                                                                                                                                     172
                                                  551
                                                                                                                                                                                                371
                                                                                                                                                                                                                                              311
                                                                                                                                                                                                                                                                                            251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               be
```

BASE CORIGIN	FEATURES SOU	ORGANISM REFERENCE AUTHORS TITLE JOURNAL COMMENT	RESULT 2 EM602792 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE	Qy		Qy	Qy Db	Оy	Qy	. Qy
COUNT	RES	NISM NCE ORS E NAL	LT 2 2792 S NITION SSION ION ORDS CE	391 914	371 876	353 821	333 788	313 732	293 672	273 612
/Organism="Homo sapiens" /db_xref="taxon:9606" /clone_fib="NHH_MGC.92" /clone_fib="NHH_MGC.92" /tissue_type="embryonal carcinoma, cell line" /tissue_type="embryonal carcinoma, cell line" /lab_host="DH10B (phage-resistant)" /note="Organ: testis; Vector: pcMvv-SpORT6; Site_1: NotI; /note="Organ: testis; Vectorionally; Oligo-dT primed. Site_2: Sali; Cloned unidirectionally; Oligo-dT primed. Average insert size 2.5 kb. Library enriched for full-length clones and constructed by Life Technologies. Note: this is a NIH_MGC.Library." 243 a 367 c 325 g 194 t	Tissue Procurement: ATCC CDNA Library Preparation: Life CDNA Library Arrayed by: The I. DNA Sequencing by: Agencourt Bi Clone distribution: MGC clone distribution: MGC clone of found through the I.M.A.G.E. Con http://image.llnl.gov plate: LLAM12324 row: m column High guality sequence stop: 642. Location/Qualifiers 1.1129	Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  1 (bases 1 to 1129)  NIH-MGC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999) Contact: Robert Strausberg, Ph.D. Email: cqapbs-r@mail.nih.gov	2792 2792 0COURT_6 0RNA Se 2792 2792 2792.1	GlnSerLeuProThrHisAspPro 398 	uGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeu 390	Leu-GlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSerGl 371 :::	GlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAspLeuThr 352 	SerCysValThrAlaCysProTyrAsnTyrLeuSerThrAspValGlySerGlyAlaGly 332	TyrAsnThrAspThrPheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAla 312 	AlaCysLeuHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThr 292 

Alignment Scores:

```
В
                                               ACCESSION
VERSION
KEYWORDS
                                                                     RESULT 3
AF318349
LOCUS
DEFINITION
                                                                                                                                                                                            밁
                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred.
Score:
                                                                                                                    5
                                                                                                                                     밁
                                                                                                                                                  δ
                                                                                                                                                                   В
                                                                                                                                                                             δ
                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-821-883-2
                                         SOURCE
            REFERENCE
                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                  418
                                                                                                                                                                                                                              513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      М
:
                                                                                                          753
                                                                                                                                       693
                                                                                                                                                      538
                                                                                                                                                                    633
                                                                                                                                                                                  518
                                                                                                                                                                                                 573
                                                                                                                                                                                                               498
                                                                                                                                                                                                                                            478
                                                                                                                                                                                                                                                            453
                                                                                                                                                                                                                                                                          458
                                                                                                                                                                                                                                                                                        393
                                                                                                                                                                                                                                                                                                       438
                                                                                                                                                                                                                                                                                                                      333
                                                                                                                                                                                                                                                                                                                                                   273
                                                                                                                                                                                                                                                                                                                                                                 398
                                                                                                                                                                                                                                                                                                                                                                               213
                                                                                                                                                                                                                                                                                                                                                                                              378
                                                                                                                                                                                                                                                                                                                                                                                                             153
                                                                                                                                                                                                                                                                                                                                                                                                                           358
                                                                                                                                                                                                                                                                                                                                                                                                                                                        338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     318
                                                                                                                                                                                                                                                                                                                                                                                                                                          93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51
                                                                                                                                                                                               GlyTyrValAlaProLeuThrCysSerProGlnProGluTyrValAsnGlnProAspVal
                                                                                                                                                                                                                                                                                                                                                                                      PheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeuProThrHisAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                        oSerProSerThr 558
                                                                                                                                              ProGluTyrLeu-GlyLeuAspValProAla-----AlaAlaProAlaArgSerPr
                                                                                                                                                                                                                                                                                                                                                          ProSerProLeuGlnArgTyrSerGluAspProThrValProLeuProSerGluThrAsp
                                                                                                                                                                                                                                                                                                                                                                                                                    SerGluGluGluAlaProArgSerProLeuAlaProSerGluGlyAlaGlySerAspVal
                                                                                                          TGATGTGTCCTCA
                                                                                                                                       CCAGAGTACCTGGGGTCTGGACGTGCCAGTGTGAACCAGAAGCCAAGTCCGCAAAAGCCC
                                                                                                                                                                                                                                                                                                                                                  CCCAGCCCTCTACAGCGGTACAGTGAGGACCCCCACAGTACCCCTGCCCTCTGAGACTGAT
                                                                                                                                                                                                                                                                                                                                                                               TTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCTGCAAAGCCTCCCCACACATGAC
                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Eukaryota; Metazoa; Primates; Catarrhini; Hominidae;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 4715)
                                               Homo sapiens
AF318349
AF318349.1 G
                                                                             AF318349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (1-690)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.78e-83
1176.50
92.24%
91.02%
31.47%
                                                       GI:18027789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  x BM802792
                                                                    pp3659
                                                                     mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (1-1129)
                                                                             4715
                                                                     complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches:
Indels:
                                                                             ğ
                                                                     mRNA
cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1129
223
3
9
10
                                                                             HTC
                          Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                417
                                                                                                                                                                                                                                                                                                                                                                                                                                         152
                                                                                                                                                     554
                                                                                                                                                                                                                                                                          477
                                                                                                                                                                                                                                                                                        452
                                                                                                                                                                                                                                                                                                      457
                                                                                                                                                                                                                                                                                                                                   437
                                                                                                                                                                                                                                                                                                                                                                                                                           377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92
                                                                                                                                       752
                                                                                                                                                                    692
                                                                                                                                                                                  537
                                                                                                                                                                                                632
                                                                                                                                                                                                              517
                                                                                                                                                                                                                              572
                                                                                                                                                                                                                                            497
                                                                                                                                                                                                                                                           512
                                                                                                                                                                                                                                                                                                                      392
                                                                                                                                                                                                                                                                                                                                                  332
                                                                                                                                                                                                                                                                                                                                                                               272
                                                                                                                                                                                                                                                                                                                                                                                             397
                                                                                                                                                                                                                                                                                                                                                                                                           212
                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                            ò
                                                                                        Š
                                                                                                                      Ş
                               Q
                                               Ъ
                                                                             Дb
                                                                                                         В
                                                                                                                                      В
                                                                                                                                                   Ş
                                                                                                                                                                   В
                                                                                                                                                                                Ş
                                                                                                                                                                                                В
                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                             US-09-821-883-2 (1-690)
                                                                                                                                                                                                                                             DB:
                                                                                                                                                                                                                                                                                                             BASE
                                                                                                                                                                                                                                                                          Score:
                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                       Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                   3721
                                                                                                                                                                                                3379
                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                3661
                                                                             3601
                                                                                                                                      3481
                                                                                                                                                                    3421
                                                                                                                                                                                                                                                                                                             COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                         3541
                                                                                                                                                                                                                                                                                 No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                              318
                                438
                                                                                          398
                                                             418
                                                                                                                        378
                                                                                                                                                     358
                                                                                                                                                                                  338
                                                                                                                                                                                                PheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeuGlnSerLeuProThrHisAsp
                                                                                                                                              SerGluGluGluAlaProArgSerProLeuAlaProSerGluGlyAlaGlySerAspVal
                                                                                                                                                                   ArgHisArgSerSerSerThrArgSerGlyGlyAspLeuThrLeuGlyLeuGluPro
                                                                             CCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGTACCCCTGCCCTCTGAGACTGAT
                                                                                                         TTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCTGCAAAGCCTCCCCACACATGAC
                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1
                                                                                                                                                                                                                                                                                                             969
                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                          2e-81
1163.00
92.89%
92.89%
31.10%
                                                                                                                                                                                                                            x AF318349 (1-4715)
```

Length:
Matches:
Conservative:
Mismatches:
Indels:

4715 222 0 9 9

Gaps:

3780 457 3720 3660 417 3600 3540 377 3480

397

3420

```
Huang,Y., Zhou,X.M., Wan,D.F. and Gu,J.R. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Huang, Y., Zhou, X.N
Wan, D.F. and Gu, J
                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (02-NOV-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                      Genes, Shanghai Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human cDNA clones
/translation="MALESILRRETHOSDVWSYGVTVWELMTEGAKPYDGIPAREIP
DLLEKGERLPOPPICTIDVYMINVKCWMJDSECRPRFRELVSESFRMARDDPGREVVIO
NEDLGPASPLDSTFYRSLLEDDDWGDLVDAEEYLVPQOGFFCPDPAPGAGGWVHHRHR
SSSTRSGGGDLTIGLESSEEEAPRSPLAPSGGAGSDVFDGDLCWGAAKGLQSLETHDP
SPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAG
ATLERPKTLSPGKNGVVKDVFAFGGAVEMPEYLTPQGGAALSPTLLLBSAQPSTTSIT
GTRTHOSGGLHRAPASKGHLRQRTQSTWVWTCQCEPEGQVRRSPDVSSGSREGLTSAGI
KRWEGPPTTSRGTCHARNLS"
953 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                zhou, X.M.,
                                                                                                                                                                         /product="unknown"
/protein_id="AAL55856.1"
/db_xref="GI:18027790"
                                                                                                                                                                                                                                                                        /gene="pp3659"
2950. .4188
                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                               /codon_start-1
                                                                                                                                                                                                                                                  /gene="pp3659"
                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zhou, X.M.,
                                                                                                                                                                                                                                                                                                                                                                                                         China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zhang, P.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zhang, P.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                        National Laboratory For Oncogenes Institute, 25/Ln 2200 Xie-Tu Road,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Jiang, H.Q.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jiang,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ì
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inhibiting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qin, W.X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cancer
                                                                                                                                                                                                                                                                                                                                                                                                                      Road, Shanghai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zhao, X.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ,х.Т.,
                                                                                                                                                                                                                                                                                                                                                                                                                                              Related
```

```
RESULT 4
BM721340
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3781
                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProGluTyrLeuGlyLeuAspValProAlaAlaAlaProAlaArgSerProSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AspProProGluArgGlyAlaProProSerThrPheLysGlyThrProThrAlaGluAsn 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGACAACCTCTATTACTGGGACCAG 3959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlnProHisProProProAlaPheSerProAlaPheAspAsnLeuTyrTrpTrpAspGln 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGAGTACCTGGGTCTGGACGTGCCA-----GTGTGAACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACCCACCAGAGCGGGGGGCTCCACCCAGCACCTTCAAAGGGACACCTACGGCAGAGAAC 4019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: msoares@blue.weeg.ulowa.edu
Tissue Procurement: Dr. Greeg Hageman
cDNA Library preparation: Dr. M. Bento Soares, Univeristy of Iowa
cDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of Iowa
DNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iowa
Clone Distribution: Researchers may obtain clones from Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BM721340 653 bp mRNA UI-E-E01-aib-p-15-0-UI-I UI-E-E01 Homo s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genome Res. 6 (9), 97044477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 653)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BM721340
BM721340.1 GI:19041189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genetics (www.resgen.com).
Seq primer: M13 Reverse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       451 Eckstein Medical Research Building Iowa City,
Tel: 319 335 8250
Fax: 319 335 9565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Soares, MB Program for Rat Gene Discovery and Mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   discovery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bonaldo, M.F., Lennon, G. and Soares, M.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       University of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Normalization and subtraction:
constructed according to Bonaldo, Lennon and Soares, Genome Research, 6:791-806, 1996. First strand cDNA synthesis was primed with an oligo-dT primer containing a Not I site. Double stranded cDNA was ligated to an EcoR I adaptor, digested with Not I, and cloned directionally into pT7T3-Pac vector. The oligonucleotide used to prime the synthesis of first-strand cDNA contains a library tag sequence that is located between the Not I site and the
                                                                                                                                                                            /lab_host="DH10B (Life Technologies) (T1 phage resistant)"
/note="Organ: eye; Vector: pT7T3-Pac (pharmacia) with a
modified polylinker; Site_1: EcoR ; Site_2: Not I;
UI-E-EO1 is a normalized cDNA library containing the
following tissue(s): fetal eye. The library was
                                                                                                                                                                                                                                                                                            /clone="UI E-E01-aib-p-15-0-UI"
/clone_lib="UI E-E01"
/tissue_type="fetal eye"
/dev_stage="fetal"
                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         791-806 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           653 bp mRNA linea
UI-E-E01 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   approaches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ៩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST 01.
A clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52242,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        477
```

밁 Ş 밁 Ş 밁 Š 밁 Š B õ

```
ACCESSION
VERSION
KEYWORDS
                                                                                               RESULT 5
AL701765
LOCUS
                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE CO
                                                                                                                                           밁
                                                                                                                                                              δÃ
                                                                                                                                                                                      밁
                                                                                                                                                                                                        Q
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-821-883-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNT
                                                                                                                                           603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                547
                                                                                                                                                                                      543
                                                                                                                                                                                                                                483
                                                                                                                                                                                                                                                                                                                                                                                  447
                                                                                                                                                                                                                                                    507
                                                                                                                                                                                                                                                                         423
                                                                                                                                                                                                                                                                                              487
                                                                                                                                                                                                                                                                                                                    363
                                                                                                                                                                                                                                                                                                                                         467
                                                                                                                                                                                                                                                                                                                                                                                                                              427
                                                                                                                                                                                                                                                                                                                                                                                                                                                  183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          347 GlyGlyGlyAspLeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerPro 366
                                                                                                                                                                                                                                                                                                                                                               303
                                                                                                                                                                                                                                                                                                                                                                                                        243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                              AlaLysGlyLeuGlnSerLeuProThrH1sAspProSerProLeuGlnArgTyrSerGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LeualaProSerGluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAla
                                                                                                                                                                                                                                                                       GlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSer
                                                                                                                                                                                                                                                                                                                                                                                                                  ProGlnProGluTyrValAsnGlnProAspValArgProGlnProProSerProArgGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACCCCACAGTACCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCGGTGGGGACCTGACACTAGGGCTGGAGCCCCTCTGAAGAGGAGGCCCCCCAGGTCTCCA
                                                                                                                                                              AlaAlaAlaProAlaArgSerProSerPro 556
                                                                                                                                                                                                SerThrPheLysGlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValPro
                                                                                                                                                                                                                                                                                                                                                                                                        CCCCAGCCTGAATATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCCGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AspProThrValProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSer
                                                                                                                                                                                      AGCACCTTCANAGGGACACCTACGGCAGAGAACCCCAGAGTACCTGGGTCTGGACGTGCCA
                                                                                                                                                                                                                                                                                                                                                              GGCCCTCTGCCTGCCCGACCTGCTGGTGCCACTCTGGAAAGGCCCCAAGACTCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGCACCCTCCGAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCA
Homo sapiens
Eukaryota; Me
Mammalia; Eut
                                          AL701765.1
EST.
                                                               DKFZp686P06148_r1 (
DKFZp686P06148_5',
AL701765
                                                                                                 AL701765
                                   human.
                                                                                                                                           -GTGTGAACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (1-690) x BM721340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (dT)18 tail. The sequence tag for this library is GCGCTATACC. This library was created for the program, Discovery in the Visual System, supported by National Institute (NEI). *

a 226 c 188 g 108 t 1 others
 Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.78e-76
1087.00
96.19%
96.19%
29.07%
                                                      GI:19685121
                                                                                       686
                                                                          mRNA
 Chordata;
Primates;
                                                                         569 bp mRNA (synonym: hlcc3) Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (1-653)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels:
                                                                                                                                           626
 Craniata; V
Catarrhini;
 Vertebrata;
i; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              653
202
6
                                                                                                linear
                                                                                     sapiens
           Euteleostomi;
                                                                                       CDNA
                                                                                                                                                                                                                                               526
                                                                                                                                                                                                                                                                                                                                                                              466
                                                                                                                                                                                                                              542
                                                                                                                                                                                                                                                                                               506
                                                                                                                                                                                                                                                                                                                                         486
                                                                                                                                                                                                                                                                                                                                                                                                                             446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               406
                                                                                                                                                                                                                                                                         482
                                                                                                                                                                                                                                                                                                                      422
                                                                                                                                                                                                                                                                                                                                                                                                        302
                                                                                                                                                                                                                                                                                                                                                                                                                                                 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     122
```

```
В
                                                                 δÃ
                                                                                            밁
                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                δÃ
밁
               ð
                                                                                                               Ş
                                                                                                                                        닭
                                                                                                                                                               ő
                                                                                                                                                                                             ₽
                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                          US-09-821-883-2 (1-690) x AL701765 (1-569)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              No . .
                                                                                                                                                                                                                                                                                                                                        420
                       267
                                              360
                                                                     247
                                                                                              300
                                                                                                                     227
                                                                                                                                             240
                                                                                                                                                                      207
                                                                                                                                                                                              180
                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                      167
                                                                                                                                                                                                                                                                                                                     147
                                                                                                                                                                                                                                                                                           60
                                           ProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGlnLeuArgSerLeuThrGlu
           LysHisSerAspCysLeuAlaCysLeuHisPheAsnHisSerGlyIleCysGluLeuHis
                                                                                                                                                                                                                                                                                             CCTGTCACAGGGGCCTCCCCAGGAGGCCTGCGGGAGCTGCAGCTTCGAAGCCTCACAGAG
AAGCACTCTGACTGCCTGGCCTGCCTCCACTTCAACCACAGTGGCATCTGTGAGCTGCAC
                                                                                                                                                                                                                                               ATCTTGAAAGGAGGGTCTTGATCCAGCGGAACCCCCAGCTCTGCTACCAGGACACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This is the 5' sequence of the clone insert Clone from S. Wiemann, Molecular Genome Analysis, German Cancer Research Center (DKFZ); Email s. wiemann@dkfz- heidelberg.de; sequenced by Qiagen (Hilden/Germany) within the cDNA sequencing consortium of the German Genome Project.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059
Berlin- Charlottenburg, GERMANY; Email: clone@rzpd.de.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Duesterhoeft, A., Lauber, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Am Klopferspitz 18a D-82152 Martinsried, Germany This is the 5' sequence of the clone insert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Duesterhoeft A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This clone (DKFZp686P06148) is available at the RZPD in Berlin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No s1 sequence available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 569)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Duesterhoeft, et al.)
ublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Vector: pTriplEx2; Site_1: SfiIA; Site_2: SfiIB;
cDNA-collection"
187 c    156 g    110 t    1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="human skeletal muscle"
/dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="DKFZp686F06148"
/clone_lib="686 (synonym: hlcc3)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                     2.7e-73
1046.00
98.95%
98.95%
27.98%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ģ
                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                               Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mewes, H.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gassenhuber, J. and Wiemann
                                                                                                                                                                                                                                                                                                                                                                                                                  188
0
188
0
479
                     286
                                            419
                                                                                                                                                                                                                                                                    186
                                                                                                                                                                                                                                                                                                                    166
                                                                   266
                                                                                             359
                                                                                                                    246
                                                                                                                                             299
                                                                                                                                                                    226
                                                                                                                                                                                              239
                                                                                                                                                                                                                    206
                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                             119
                                                                                                                                                                                                                                                                                                                                            59
```

```
RESULT 6
BQ958632
LOCUS
                                                     В
                                                                                     Qy
                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
JOURNAL
                       δÃ
                                                                                                                                              Ω
                                                                                                                                                                               US-09-821-883-2 (1-690)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                          Pred.
                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                       Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                         No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         307
138
                              362
                                                                                        342
                                                                                                                                                  322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      287
                                                          78
                                                                                                                    18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AlaProArgSerProLeuAlaProSerGluGlyAlaGlySerAspValPheAspGlyAsp
                                                                          TTCTTCTCCCCAGACCCTGCCCTAGGTACTGGGAGCACAGCCCACCGCAGACACCGCAGC
                                                                                                                                      TyrLeuSerThrAspValGlySerGlyAlaGlyGlyMetValHisHisArgHisArgSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ArgTyrThrPheGlyAlaSerCysValThr 316
                                                          TCGTCGGCCAGGAGTGGCGGTGGTGAGCTGACACTGGGCCCTGGGAGCCCTCGGAAGAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGTATACATTCGGCGCCAGCTGTGTGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BQ958632
BQ958632.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; E
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
1 (bases 1 to 943)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collect
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BQ958632 943 bp mI
AGENCOURT_10061234 NCI_CGAP_Mam2 Mus
IMAGE:6485621 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-remail.nih.gov
Tissue Procurement: Gilbert Smith, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Plate: LLAM14027 row: l column: 06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence stop: 579.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium DNA Sequencing by: Agencourt Bioscience Corporation Clone distribution: MGC clone distribution informat
                                                                                                                                                                                                                                                                                                                                                   203
                                                                                                                                                                                                                                                                                                                                              /note-"organ: mammary; Vector: pCMV-SPORT6; Site_1: Sal
Site_2: NotI; Cloned unidirectionally. Primer: Oligo of
Library constructed by Life Technologies. Investigator
providing samples: Gilbert Smith, NIH"
312 c 249 g 179 t
                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="NCI_CGAP_Mam2"
/tissue_type="tumor, biopsy sample"
/dev_stage="5 months"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:10090"
/clone="IMAGE:6485621"
                                                                                                                                                                                                                                                                                                                                                                                                                            /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /strain="FVB/N-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Mus musculus"
                                                                                                                                                                                                             1.85e-67
976.00
77.04%
72.76%
26.10%
                                                                                                                                                                               x BQ958632 (1-943)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:22374110
                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gene Collection (MGC)
                                                                                                                                                                                                              943
187
11
43
16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Euteleostomi;
; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST 21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (LLINL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        539
197
                            381
                                                        137
                                                                                      361
                                                                                                                      77
                                                                                                                                                 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         þe
                                                                                                                                                                                                                                                                                                                                                                                                             SalI;
                                                                                                                                                                                                                                                                                                                                                                                                 dŢ.
```

```
RESULT 7
BI557797
                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FOCUS
                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
                                                                                                                                                                                                                                                                   JOURNAL
                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProLeuThrCysSerProGlnProGluTyrValAsnGlnProAspValArgProGlnPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ProAlaArg----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GlyLeuAspValProAla-----AlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ProProAlaPheSerProAlaPheAspAsnLeuTyrTyrTrpAspGlnAspProProGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCGGTACAGTGAGGATCCCACATTACCTCTGCCCCCCGAGACTGATGGCTACGTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlnArgTyrSerGluAspProThrValProLeuProSerGluThrAspGlyTyrValAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerProLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCCTGGATGTGCCAGTATGAGGTCACATGTGCAGACATCCCTCTGTCTTCAGAGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGGTCCTCCACCAAGTACCTTTGAAGGGACCCCCACTGCAGAGAACCCTGAGTACCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTCCTGCCTTCAGCCCAGCCTTTGACAACCTCTATTACTGGGACCAGAACTCATCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGTGGAGAACCCTGAATACTTAGCACCCAGAGCAGGCACTGCCTCTCAGCCCCACCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AlaValGluAsnProGluTyrLeuThrProGlnGlySlyAlaAlaProGlnProHisPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCTTGACCCCAGAGGGTCCTCCGCCTCCCATCCGACCTGCTGGTGCTACTCTAGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCAGTGGGGGTAACCAAAGGACTGCAGAGCCTCTCTCCACATGACCTCAGCCCTCTA
                                                                           Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lothar Hennighausen Ph.D., Chu-Xia D
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLN
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information
found through the I.M.A.G.E. Consortium/LLNL at:
http://lmage.llnl.gov
Plate: LLAM11733 row: 1 column: 20
High quality sequence stop: 801.
                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence.
BI557797
                                                                                                                                                                                                                                                                                                                                                             Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                        BI557797
603236977F1 NCI_CGAP_Mam3
                                                                                                                                                                                                                                                                            NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                BI557797.1
                                                                                                                                                                                                                                               Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                  Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                 house mouse
                                                                                                                                                                                                                                                                                                                 mmalia; Eutheria; (bases 1 to 813)
 /organism="Mus musculus"
/strain="129,C57BL/6J,FVB/N"
/db_xref="taxon:10090"
                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                 GI:15445111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              813
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             A linear cDNA clone
                                                                                                                                                                                                                                                                                 Gene
                                                                                                                                                                                                                                                                                 Collection
                                                                                                                                                                                                               Chu-Xia Deng Ph.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST 05-SEP-2001
IMAGE:5290075 5',
                                                                                                                                                                                 (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              257
                                                                                                                                                  þe
DEFINITION
ACCESSION
```

밁 S В δ 밁 S

밁 õ 밁 S 밁 Ş 8 Ş 문 δ 밁 5 밁 Ş

```
RESULT 8
AW370693
...LOCUS
                                                                              Š
                                                                                                     밁
                                                                                                                      Ş
                                                                                                                                             밁
                                                                                                                                                                Ş
                                                                                                                                                                                                       δÃ
                                                             В
                                                                                                                                                                                      밁
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment
Pred. No.:
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-821-883-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score:
                                                              603
                                                                                 541
                                                                                                      543
                                                                                                                         521
                                                                                                                                              483
                                                                                                                                                                  501
                                                                                                                                                                                       423
                                                                                                                                                                                                          481
                                                                                                                                                                                                                              363
                                                                                                                                                                                                                                                  461
                                                                                                                                                                                                                                                                      303
                                                                                                                                                                                                                                                                                          441
                                                                                                                                                                                                                                                                                                            401
                                                                                                                                                                                                                                                                                                                                                                                               123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           183
                                                                                                                                                                                                                                                                                                                                                                                                                   381
                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                            LeuGlyLeuAspValPro
                                                                                                     ArgAlaLysThrLeuSerProGlyLysAsnGlyValValLysAspValPheAlaPheGly
                                                                                                                                                                                                                                                                                 ProProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGlu
                                                                                                                                                                                                                                                                                                                                                                 LeuGlnArgTyrSerGluAspProThrValProLeuProSerGluThrAspGlyTyrVal
                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTCCCTTGACCCCAGAGGGTCCTCCGCCTCCCATCCGACCTGCTGGTGCTACTCTAGAA
                                                                                                                                                                                                                                                                                                                                                      CTACAGCGGTACAGTGAGGATCCCACATTACCTCTGCCCCCGGAGACTGATGGCTACGTT
                                                                                                                                                                                                                                                                                                                                                                                             GACCTGGCAGTGGGGGTAACCAAAGGACTGCAGAGCCTCTCTCCACATGACCTCAGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                         AspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scores:
                                                                                                                                                                                                                              AGACCCAAGACTCTCTCCTGGGAAAAATGGGGTTGTCAAAGACGTTTTTGCCTTTTGGG
AW370693 614 bp mRNA lir
QV1-BT0260-011199-024-all BT0260 Homo sapiens
AW370693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (1-690) x BI557797 (1-813)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Organ: mammary; Vector: pCMV-SPORT6; Site_1: SalI; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Library constructed by Life Technologies. Investigators providing samples: Lothar Hennighausen/Chu-Xia Deng, NH Reference for transgenic model: Xu et al., Nature Genetic 22, 37-43 (1999)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="tumor, gross
/dev_stage="10 months"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="IMAGE:5290075"
/clone_lib="NCI_CGAP_Mam3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.06e-63
924.00
87.38%
83.50%
24.71%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 259 c
                                                              620
                                                                                 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                223 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 163 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tissue"
                      linear
           CDNA,
                                         è
            mRNA
                      EST 04-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                          540
                                                                                                                                              542
                                                                                                                                                                   520
                                                                                                                                                                                                         500
                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                          460
                                                                                                                                                                                                                                                                                                               302
                                                                                                                                                                                                                                                                                                                                   440
                                                                                                                                                                                                                                                                                                                                                                                             182
                                                                                                                                                                                                                                                                                                                                                                                                                 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                         380
                                                                                                                                                                                      482
                                                                                                                                                                                                                              422
                                                                                                                                                                                                                                                                      362
                                                                                                                                                                                                                                                                                                                                                     242
                                                                                                                                                                                                                                                                                                                                                                                                                                     122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genetics
```

sequence

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                õ
                                                  В
                                                                         ő
                                                                                                                   ₽
                                                                                                                                             Ş
                                                                                                                                                                                     В
                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                  DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred
                                                                                                                                                                                                                                                                                                                                                                                              US-09-821-883-2 (1-690) x AW370693 (1-614)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local S
y Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       М
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                 272
                                                                                    252
                                                                                                                      197
                                                                                                                                      232 GlnSerLeuThrArgThrValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuPro
                                                                                                                                                                                         137
                                                                                                                                                                                                                                                                                           192
                                                                                                                                                                                                                                                                                                                        77
                                                                                                                                                                                       CACCCCTGTTCTCCGATGTGTAAGGGCTCCCGCTGCTGGGGGAGAGTTCTGAGGATTGT
                                                                                                                                                                                                           H1sProCysSerProMetCysLysGlySerArgCysTrpGlyGluSerSerGluAspCys
                LeuAlaCysLeuHisPheAsnHisSerGlyIleCysGluLeuHisCysProAlaLeuVal
                                                                  ThrAspCysCysHisGluGlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCys 271
                                                                                                                    CAGAGCCTGACGCGCACTGTCTGTGCCGGTGGCTGTGCCCGCTGCAAGGGGGCCACTGCCC
                                                                                                                                                                                                                                                         TTCCACAAGAACAACCAGCTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGC
                                                                                                                                                                                                                                                                           PheHisLysAsnAsnGlnLeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scores
                                                  ACTGACTGCTGCCATGAGCAGTGTGCTGCCGGCTGCACGGGCCCCAAGCACTCTGACTGC
Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             High quality sequence start: 12
High quality sequence stop: 612.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL.
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=QVI&t2=QVI-BT0260-
011199-024-all&t3=1999-11-01&t4=1)
Seq.primer: puc 18 forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HCGP http://www.ludwig.org.br/ORESTES.
The FAPESP/LICE Human Cancer Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 614)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       wig Institute for Cancer Research Prof. Antonio Prudente 109, 4 andar, 01509-010,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note-"Organ: breast; Vector: puc18; Site_1: SmaI; Site_2: SmaI; A mini-1lbrary was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196, 716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="BT0260"
/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        stringency conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                7.5e-63
915.00
100.00%
100.00%
24.47%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                158
0
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Paulo-SP,
                 291
                                                                                                                                                                                       196
                                                                                                                                                                                                                                                         136
                                                                                                                                                                                                                                                                                          211
                                                                                                                   256
                                                                                                                                                     251
                                                                                                                                                                                                                     231
```

```
RESULT 9
BI154872
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
밁
                          ρ
                                                             B
                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                US-09-821-883-2 (1-690) x BI154872
                                                                                                                                                                                 Query Match:
                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                    Score:
                                                                                                                                                                                                                                                    Alignment
Pred. No.:
                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         377
171
                                 342
                                                                 111 TTCTTCTCCCCAGACCCTGCCCTAGGTACTGGGAGCACAGCCCACCGCAGACACCGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          317 CTGGCCTGCCTCCACTTCAACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaSerCysValThrAlaCysProTyrAsnTyrLeuSerThrAspValGlySer 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SerSerThrArgSerGlyGlyAspLeuThrLeuGlyLeuGluProSerGluGluGlu
                                                                                    TyrLeuSerThrAspValGlySerGlyAlaGlyGlyMetValHisHisArgHisArgSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCAGCTGTGACTGCCTGTCCCTACAACTACCTTTCTACGGACGTGGGATCC
TCGTCGGCCAGGAGTGGCGGTGGTGAGCTGACACTGGGCCCTGGAGCCCCTCGGAAGAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        http://imagge.llnl.gov
http://imagge.llnl.gov
plate: LLAMI1090 row: b column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lothar Hennighausen Ph.D., Chu-xia D
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLN
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \begin{tabular}{ll} NIH-MGC & http://mgc.nci.nih.gov/. \\ National & Institutes & of Health, Mammalian Gene Collection \\ \end{tabular}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA sequence.
BI154872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BI154872
602902857F1 NCI_CGAP_Mam3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Robert Strausberg, Ph.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mammalia; Eutheria;
1 (bases 1 to 791)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BI154872.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             found through the I.M.A.G.E. Consortium/LLNL
                                                                                                                                                                                                                                                                                                                       159
                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                /note-"Organ: mammary; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Library constructed by Life Technologies. Investigators providing samples: Lothar Hennighausen/Chu-Xia Deng, NIH Reference for transgenic model: Xu et al., Nature Genetics 22, 37-43 (1999)."
                                                                                                                                                                                                                                                                                                                                                                                                                           /dev_stage="10 months"
/lab_bost="DH10B"
/nofe="^~~-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /strain="129,C57BL/6J,FVB/N"
/db_xref="taxon:10090"
/clone="IMAGE:5032238"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="NCI_CGAP_Mam3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism-"Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ocation/Qualifiers
                                                                                                                                                                 1.79e-62
912.00
82.30%
77.88%
24.39%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:14614873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata;
Rodentia;
                                                                                                                                (1-791)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    791 bp
3 Mus mu
                                                                                                                                                                                 Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                  Length:
Matches:
                                                                                                                                                                 Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Veri
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chu-Xia Deng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 05-JUL-2001
IMAGE:5032238 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          376
                               361
                                                                 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus.
                                                                                         .-.
```

Ş

Ş

밁

```
RESULT 10
BM790293
LOCUS
                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                  FEATURES
                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               411
                                                                                                                                                                                                                                                                                                                                                                                                    770
                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uGlyLeuAspValPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                  oProProAlaPheSerProAlaPheAspAsnLeuTyrTyrTrpAspGlnAspProProGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGTGGAGAACCCTGAATACTTAGCACCCAGAGCAGGCACTGCCTCTCAGACCCCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaValGluAsnProGluTyrLeuThrProGlnGlyGlyAlaAlaProGln-ProHisPr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProLeuThrCysSerProGlnProGluTyrValAsnGlnProAspValArgProGlnPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LeuGlyMetGlyAlaAlaLySGlyLeuGlnSerLeuProThrHisAspProSerProLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlaProArgSerProLeuAlaProSerGluGlyAlaGlySerAspValPheAspGlyAsp
                                                                                                                                                                                                                                                                                                                                                                                                    AGGCCTGGATGTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCTCCTGCCTTCAGCCCAGCCTTTGACAACCTCTATTACTGGGACCAGAACTCATCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52 Eoeun-dong Yuseong-gu,
Tel: +82-42-860-4470
Fax: +82-42-860-4409
                                                                                                                                              Contact: Kim YS
Genome Research Center
                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 491)

Kim,N.S., Hahn,Y., Oh,J.H., Lee,J.Y., Ahn,H.Y., Chu,M.Y., Kim,M.R
                                                                                                                                                                                                                                                                                                                              mRNA sequence.
                                                                                                                                                                                                                                                                                                                                        K-EST0070099 S22SNU16
                                                                       Email: yongsung@mail.kribb.re.kr
Plate: 3 row: A column: 11
                                                                                                                       Koren Research Institute of Bioscience & Biotechnology 52 Eoeun-dong Yuseong-gu, Daejeon 305-333, South Korea
                                                                                                                                                                      Unpublished
                                                                                                                                                                                                       Oh, K.J., Cheong, J.E.,
                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                        вм790293.1
                                                                                                                                                                                               Kim, Y.S.
                                                                                                                                                                                                                                                                                 human.
                                                                                                                                                                                Frontier Korean
                                               quality sequence stop: 491.
Location/Qualifiers
 /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="S22SNU16-3-A11"
                                                                                                                                                                                                                                                                                                        GI:19138525
                                                                                                                                                                                                       Oh,J.H., Lee,J.Y., Ahn,H.Y.,
E., Sohn,H.Y., Kim,J.M., Park
                                                                                                                                                                                                                                                                                                                                         Homo
                                                                                                                                                                                   Project 2001
                                                                                                                                                                                                                                                                                                                                        491 bp
mo sapiens
                                                                                                                                                                                                                                                                                                                                       mRNA linear EST 05-MAR-2002 CDNA clone S22SNU16-3-A11 5',
                                                                                                                                                                                                        Park, H.S., Kim
                                                                                                                                                                                                         Kim, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 403
                                                                                                                                                                                                                                                                                                                                    ... Qy
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                       RESULT 11
B1649877
LOCUS
                                                                                                                       밁
                                                                                                                                                                     밁
                                                                                                                                                                                         Qy
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score:
```

Š

밁

á ₽

밁

5

밁 Ş 8 Š 밁 Ş 밁 S 밁 δ 밁

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment
Pred. No.:
                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-821-883-2 (1-690) x BM790293 (1-491)
                                                                                                                 481
                                                                                                                                      538
                                                                                                                                                            421
                                                                                                                                                                                                         361
                                                                                                                                                                                                                                498
                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                           478
                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                       458
                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                 418
                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProGluTyr 540
                                                                                                                                                           ThrLeuGluArgAlaLysThrLeuSerProGlyLysAsnGlyValValLysAspValPhe
                                                                                                                                                                                                                                                                                                                                             ArgProGlnProProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAla
                                                                                                                                                                                                                                                                                                                                                                                          GlyTyrValAlaProLeuThrCysSerProGlnProGluTyrValAsnGlnProAspVal
                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGAGTAC
                                                                                                                                                                                                                                                                                                  ACTCTGGAAAGGGCCAAGACTCTCTCCCCAGGGAAGAATGGGGGTCGTCAAAGACGTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scores:
                     mRNA sequence.
B1649877
B1649877.1 GI:
EST.
house
                                                        BI649877
603296516F1
                                                                                                                 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note-*Organ: Stomach; Vector: pT7T3-Pac; Site_1: EcoRI; Site_2: NotI; The S22SNU16 library was contributed by the Soares laboratory and it was constructed as described by Bonaldo, M.F., Lennon, G. and Soares, M.B. (1995). Genome Research 6(9): 791-806. RNA was prepared from harvested cells of SNU-16 culture. SNU-16 cell was obtained from Korean Cell Line Bank (KCLB). SNU-16 was established from ascitic fluids of Korean patients by Park J.G. et al. (1990), Cancer Res 50: 2773-2780."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cione_lib="S22SNU16"
/sex="F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="Ascites"
/cell_type="Lymphoblast-like"
/cell_line="SNU-16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7.31e-62
901.00
100.00%
100.00%
24.10%
                                                      NCI_CGAP_Mam3
                                                        Mus
                                                                    998 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                         musculus
                                                         CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491
163
0
                                                                    linear
                                                        clone
                                                                                                                                                                                    537
                                                                                                                                                                                                         420
                                                                                                                                                                                                                               517
                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                            497
                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                        477
                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                     457
                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                 437
                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ..
```

mouse

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
DB:
δ
                           밁
                                           Ş
                                                                          В
                                                                                              ð
                                                                                                                              밁
                                                                                                                                                  Š
                                                                                                                                                                                   밁
                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                         US-09-821-883-2 (1-690) x BI649877 (1-998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                    М
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                          405
                                                                                                                                                                                                                                      110
                                                                                                                                                                                                                                                                365
                                                                                                                                                                                                                                                                                                                 345
  465
                                                    445
                                                                                                       425
                                                                                                                                                                                    170
                                                                                                                                                                                                            385
                            350
                                                                              290
                                                                                                                                  230
                                                                                                                                                                                                                                                                                        50
                                                                                                                                                                                                                                                                                    GlyAlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerProLeuGlnArgTyr 404
                        CysSerProGlnProGluTyrValAsnGlnProAspValArgProGlnProProSerPro
                                                                                                                                             SerGluAspProThrValProLeuProSerGluThrAspGlyTyrValAlalaProLeuThr 424
                                                                                                                                                                                                                                                  SerProLeuAlaProSerGluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMet 384
                                                                                                                                                                                   GGGGTAACCAAAGGACTGCAGAGCCTCTCTCCACATGACCTCAGCCCTCTACAGCGGTAC
                                                                                                                                                                                                                                     TCTCCACTGGCTCCCTCCGAAGGGGTTGGCTCCGATGTGTTTTGATGGTGACCTGGCAGTG
LeuSerProGlyLysAsnGlyValValLysAspValPheAlaPheGlyGlyAlaValGlu
                                                                             TGCAGCCCCAGCCCGAGTATGTGAACCAGCCAGAGGTTCGGCCTCAGTCTCCCTTGACC
                                                                                                                                AGTGAGGATCCCACATTACCTCTGCCCCCCGAGACTGATGGCTACGTTGCTCCCCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lothar Hennighausen Ph.D., Chu-Xia Deng
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
plate: LLAM11856 row: o column: 04
High quality sequence stop: 782.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus
Eukaryota; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mmalia; Eutheria; (bases 1 to 998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Mus musculus"
/strain="129,C57BL/GJ_FVB/N"
/db_xref="taxon:10090"
/clone="IMAGE:5337435"
/clone_lib="NCI_CGAP_Mam3"
/tissue_type="tumor, gross tis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Inote-"Organ: mammary; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: Not1; Cloned unidirectionally. Primer: Oligo dr. Library constructed by Life Technologies. Investigators providing samples: Lothar Hennighausen/Chu-Xia Deng, NIH Reference for transgenic model: Xu et al., Nature Genetics 37-43 (1999)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /dev_stage="10 months"
/lab_host="DHIOB"
/note="^~~~~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Metazoa;
                                                                                                                                                                                                                                                                                                                                                                             1.47e-60
889.50
69.31%
61.39%
23.79%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                  Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                   998
186
24
71
22
                                                                                                                                                                                                                                   169
  484
                                                                                                     444
                                                                                                                                                                                   229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            be
                                                                                                                                                                      JOURNAL COMMENT
                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                        Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                           FEATURES
                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                    AU123871
                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                 ORGANISM
              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                           902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      505
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rProGlu
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               564 lAsnAlaIleGlnGluAlaArgArgLeuLeuAsnLeuSerArgAspThrAlaAlaGluMe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCACCAAGTACCTTTGAAGGGACCCCCACTGCAGAGAACCCTGAGGTACCTAGGCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProProSerThrPheLysGlyThrProThrAlaGluAsnProGlu-TyrLeuGlyLeuAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PheSerProAlaPheAspAsnLeuTyrTrpAspGlnAspProProGluArgGlyAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCTCTCCTGGGAAAAATGGGGTTGTCAAAGACGTTTTTGCCTTTGGGGGGTGCTGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nThrArgLeuGluLeuTyrLys------GlnGlyLeuArgGlySerLeuTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tAsnGluThrValGluValIleSerGluMetPheAspLeuGlnGluProThrCysLeuGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGTGGGGAAGGAAAGGCCTAACTTGTGGTCTCCATCGGCCGCAACAAAAGCAGGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pValProAlaAlaProAlaArgSerProSerProSerThrGlnProTrpGluHisVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCAGCCCAGCCTTTGACAACCTCTATTACTGGGACCAGAACTCATCGGAGCAGGGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rLysLeuLysGlyProLeuThrMetMetAlaSerHisTyrLysGlnHisCysProProTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGTCCTCTGGCCACATTGACATTCCAGGGCAGCCGGCTATGCCAGGGAACGTGCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AsnProGluTyrLeuThrProGlnGlyGlyAlaAlaProGlnProHisProProProAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence.
AU123871
                                                                                                   Email: genomics@hri.co.jp
HRI human cDNA project; 5'- & 3'-end one pass sequencing: Helix
Research Institute; cDNA library construction: Department of
Virology, Institute of Medical Science, University of Tokyo, and
                                                                                                                                                                                                         Helix Research Institute
1532-3 Yana, Kisarazu, Chiba
Tel: 81-438-52-3975
                                                                                                                                                                                                                                                                                                               Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                HRI human cDNA project (Ota,T., Wakamatsu,A., Ozawa,M., Saito,K., Yamamoto,J., Nakamura,Y., Nishikawa,T., Nagai,Y., Sugano,S., Isogai,T.)
                                                                                                                                                                                                                                                                                                                                                                                                                Ota,T., Wakamatsu,A., Ozawa,M., Ishi:
Nakamura,Y., Nishikawa,T., Nagai,T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AU123871.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AU123871
AU123871 NT2RM2
                                                                                                                                                                                        Fax: 81-438-52-3986
                                                                                                                                                                                                                                                                        Genomics Laboratory
                                                                                                                                                                                                                                                                                             Contact: Takao Isogai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ammalia; Eutheria;
(bases 1 to 685)
                                                        Research Institute.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -TGTGCCAGGTATGAGCGTTCACATGTTGCAGACATTCCTCTGTCTTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -GAACTCGTGCGATGGCTTCCATCCTGCAATGGTGTAAGAGGGCCC-----
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                           . 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:10948587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               685 bp
sapiens cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCGGAAGAGACAGCGCCCCCTGT---CCAGC
                                                                                                                                                                                                                            292-0812, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                Ishii,S., Saito,K.,
i,T., Suzuki,Y., Suga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
NT2RM2001211
                                                                                                                                                                                                                                                                                                                                                                                                                  Sugano, S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 01-AUG-2002
1 5', mRNA
                                                                                                                                                                                                                                                                                                                                                        Ishii,S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 544
```

```
SOURCE
ORGANISM
                                                        VERSION
KEYWORDS
                                                                                                                            RESULT 13
AW701942
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment
Pred. No.:
                                                                                                                                                                         문
                                                                                                                                                                                             Ş
                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match:
DB:
                                                                              ACCESSION
                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-821-883-2 (1-690) x AU123871 (1-685)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                          659
                                                                                                                                                                                                497
                                                                                                                                                                                                                       599
                                                                                                                                                                                                                                             478
                                                                                                                                                                                                                                                                   539
                                                                                                                                                                                                                                                                                        458
                                                                                                                                                                                                                                                                                                                479
                                                                                                                                                                                                                                                                                                                                    438
                                                                                                                                                                                                                                                                                                                                                           419
                                                                                                                                                                                                                                                                                                                                                                                                       359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                                 418
                                                                                                                                                                                                                                                                                                                                                                                                                             398
                                                                                                                                                                                                                                                                                                                                                                                                                                                    299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  318 CysProTyrAsnTyrLeuSerThrAspValGlySerGlyAlaGlyGlyMetValHisHis
                                                                                                                                                                                                                                                                ArgProGlnProProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAla
                                                                                                                                                                                                                                                                                                                                                                      GlyTyrValAlaProLeuThrCysSerProGlnProGluTyrValAsnGlnProAspVal
                                                                                                                                                                                                                                                                                                                                                                                                                  ProSerProLeuGlnArgTyrSerGluAspProThrValProLeuProSerGluThrAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerGluGluGluAlaProArgSerProLeuAlaProSerGluGlyAlaGlySerAspVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ArgH19ArgSerSerSerThrArgSerGlyGlyAspLeuThrLeuGlyLeuGluPro
                                                                                                                                                                          CTTAAGCCCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTCCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scores:
                                                                                                                                                                                             oGlnProHisPro 501
                                                                                                                                                                                                                                                                                                             CGGCCCAGCCCCTTCGCCCGAGAGGGCCCTCTGCCTGCTGCCCGACCTGCTGGTGCC
                                                                                                                                                                                                                                                                                                                                                           CCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGTACCCCTGCCCTCTGAGACTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGACCTGACACTAGGGCTGGAGCCC
                                                                           AW701942
609 bp mRNA linear EST 18-APR-2000 uq93b02.y1 NCI_CGAP_Mam10 Mus musculus cDNA clone IMAGE:2938635 5' similar to gb:M11730 ERBB-2 RECEPTOR PROTEIN-TYROSINE KINASE PRECURSOR (HUMAN); mRNA sequence.
AW701942
AW701942
Eukaryota; Metazoa;
Mammalia; Eutheria;
1 (bases 1 to 609)
                                  Mus musculus
                                                         EST
                                             house mouse
                                                                    AW701942.1 GI:7586086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="NT2RM2001211"
/clone_11b="NYT2RM2"
/cell_type="teratocarcinoma"
/cell_line="NT2"
/cell_line="NT2"
/note="Vector: pME18SFL3; mRNA fiprecursor cells"
a 224 c 198 g 123 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.31e-60
881.00
91.89%
91.89%
23.56%
                                                                                                                                                                          671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----GACCCTGCCCGGGCGCTGGGGGCATGGTCCACCAC
          Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from uninduced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NT2
                                                                                                                                                                                                                                           497
                                                                                                                                                                                                                                                                  598
                                                                                                                                                                                                                                                                                       477
                                                                                                                                                                                                                                                                                                              538
                                                                                                                                                                                                                                                                                                                                   457
                                                                                                                                                                                                                                                                                                                                                           478
                                                                                                                                                                                                                                                                                                                                                                                 437
                                                                                                                                                                                                                                                                                                                                                                                                      418
                                                                                                                                                                                                                                                                                                                                                                                                                            417
                                                                                                                                                                                                                                                                                                                                                                                                                                                  358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        178
```

```
· · · FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL COMMENT
           Š
                                      В
                                                             Ş
                                                                                          В
                                                                                                                 Ş
                                                                                                                                                  밁
                                                                                                                                                                       QΥ
                                                                                                                                                                                                      В
                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                            Query
DB:
                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                 US-09-821-883-2 (1-690)
                                                                                                                                                                                                                                                                                                                                                                                                Score:
                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                            446
                                                                 426
                                                                                                                        406
                                                                                                                                                                                                                                 366
                                                                                            181
                                                                                                                                                   121
                                                                                                                                                                             386
                                                                                                                                                                                                        61
GluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeu
                                                                                          SerProGlnProGluTyrValAsnGlnProAspValArgProGlnProProSerProArg
                                                                                                                                                  GTAACCAAAGGGCTGCAGAGCCTCTCCACATGACCTCAGCCCTCTACAGCGGTACAGC
                                                                                                                                                                AlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSer
                                                                                                                                                                                                      AGCCCCCAGCCCGAGTATGTGAACCAATCAGAGGTTCAGCCTCAGCCTCCTTTAACCCCA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          High
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lothar Hennighausen Ph.D., Jeff
Gilbert Smith, Ph.D., William Muller, M.D.
cDNA Library Preparation: M. Bento Soares, Ph.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA Sequencing by: Washington University Genome Clone distribution: NCI-CGAP clone distribution found through the I.M.A.G.E. Consortium/LINI at: image.llnl.gov/image/html/iresources.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1997)
Contact: Robert Strausberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            National Cancer Institute, Cancer Genome Anatomy Tumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MGI:1051055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       primer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            quality sequence stop:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Mus musculus"
/db_xref="taxon:10090"
/db_xref="taxon:10090"
/clone="IMAGE:2938635"
/clone_lib="NCI_CGAP_Mam10"
/tissue_type="pooled mammary gland tumors"
/lab_host="DH10B (phage-resistant)"
/note="Organ: mammary gland; Vector: pT7T3D-Pac (Pharmacia ) with a modified polylinker; Site_1: NotI: Site_2: EcoRI; lst strand cDNA was prepared from mRNA obtained from pooled mammary gland tumors with a Not I - oligo(dT)
                                                                                                                                                                                                                                                                                                                                            4e-59
868.00
85.07%
81.09%
23.21%
                                                                                                                                                                                                                                                                                                                  x AW701942 (1-609)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -40RP from Gibco
                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ph.D.
                                                                                                                                                                                                                                                                                                                                            163
8
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jeffrey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Green
              465
                                                                 445
                                                                                                                        425
                                                                                                                                                   180
                                                                                                                                                                             405
                                                                                                                                                                                                         120
                                                                                                                                                                                                                                   385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ) Center
on can be
                                                                                            240
                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         м.
О.,
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 14
BG283493
LOCUS
             Best 1
Query
DB:
                                                           Pred.
Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                Percent Similarity:
                                                                                    Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                   Local Similarity:
                                                                                                                                                                                                                                                                                 source
                                                                          8
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                         Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProSerThrPheLysGlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspVal 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerProAlaPheAspAsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTGAATACTTAGTACCGAGAGAAGGCACTGCCTCTCCGCCCCACCCTTCTCCTGCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProGluTyrLeuThrProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGGTCCTCTGCCTCTGTCCGGCCTGCTGCTGCTACTCTAGAAAGACCCAAGACTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pro 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCCCAGCCTTTGACAACCTCTATTACTGNGACCAGAACTCATCGGAGCAGGNGCCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 621)

NIH-MGC http://mgc.nci.nih.gov/.
Mational Institutes of Health, Mammalian Gene Collections (1995)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA sequence.
BG283493
BG283493.1 GI:13033480
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BG283493 621 bp mRNA linear EST 21-FEB-2001 602407782F1 NIH_MGC_91 Homo sapiens cDNA clone IMAGE:4519652 5',
                                                                                                                                                                                                                                                                                                     DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MCC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM10416 row: d column: 21
High quality sequence stop: 602.
                                                                                                                                                                                                                                                                                                                                                                                                          Email: cgapbs-r@mail.nih.gov
Tissue Procurement: DCTD/DTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  603
                                                                                                                         131
                                                                                                                                                                                                                                                                                         quality sequence stop: Location/Qualifiers
                                                                                                                          ø
                                                                                                                      /tissue_type="adenocarcinoma, cell line"
/lab_host="DHIOB (phage=resistant)"
/note="organ: prostate; Vector: pcMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.4 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NHHMGC Library."

a 207 c 178 g 104 t .1 others
                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4519652"
/clone_lib="NIH_MGC_91"
          7.78e-59
864.50
91.67%
90.62%
23.12%
                                               Length:
Matches:
Conservative:
                      Mismatches:
Indels:
          621
174
2
12
12
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gene Collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                         be
                                                                                                .: .
                                                                                                                                                                                                                                                                                                                                                          RESULT 15
BQ717097
LOCUS
                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-821-883-2 (1-690) x BG283493 (1-621)
                                     FEATURES
                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                          JOURNAI
                         source
                                                                                                                                                                                                                                                                                                                                                                                                           539
                                                                                                                                                                                                                                                                                                                                                                                                                                   548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            411
                                                                                                                                                                                                                                                                                                                                                                                                                                                            479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                    BQ717097
                                                                                                                                                                                                                                                                 Homo sapiens
/organism="Homo sapiens"
/db_xref="taxon:9606"
```

```
391 GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsn 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCCAGCCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAAGCCTCCCCACACATGACCCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCCACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGCAAGTCCGCAGAAGCCCTGATGTGTCCTCA 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -AlaAlaProAlaArgSerProSerProSerThr 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCAGTGTGAACCAG
                                                                                                          Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. James R. Lupski
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortlum
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution informat
                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 887)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collect Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BQ717097 887 bp mRNA lines AGENCOURT_8100479 Lupski_sympathetic_trunk Homo IMAGE:6190537 5', mRNA sequence.
                                                   found through the I.M.A.G.E. Consortium/LLNL http://lmage.llnl.gov Plate: LLAM13589 row: 1 column: 02
                                                                                                                                                                                                                                 Contact: Robert Strausberg,
                                  quality sequence stop:
Location/Qualifiers
1. .887
                                                                                                                                                                                                                                                                                                                                                                                                                                   GI:21855994
                                                                                                                                                                                                                                 Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                information
                                                                                                                                                                                                                                                                       Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ear EST
                                                                                                                                                     (LLNL)
                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
                                                                                                                                                                                                                                                                                                                                     Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16-JUL-2002
cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٠.
٠.
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-821-883-2 (1-690) x BQ717097 (1-887)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      474 LysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrProGlnGly 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 394 ProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrValProLeuPro
       477
                                                                                                                                                  423
                                                                                                                                                                                                                     534
                                                                                                                                                                                                                                                                                            363
                                                                                                                                                                                                                                                                                                                          514 TyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGlyThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                           303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            494 GlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAspAsnLeuTyr 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               414 SerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGluTyrValAsn 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                w
CCAAGTCCG
                                                                                                                                                                                   ThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaProAlaArgSer 553
                                                                       ProSerPro 556
                                                                                                                                                                                                                                                                                         TACTGGGACCAGGACCCAGCAGGAGCGGGGGGGCTCCACCCAGCACCTTCAAAGGGACACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGCTGCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGACAACCTCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAATATGTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCACACATGACCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCCACAGTACCCCTGCCC
                                                                                                                                              ACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="sympathetic trunk"
/dev_stage="adult, 16 yr"
/lab_host="DH108"
/note="vector: pCMV-SPORT6 (Life Technologies); Site_1:
/note="vector: pCMV-SPORT6 (Life Technologies); Site_2: Sall; cDM, made by oligo-dT priming.
Director: pCMV-SPORT6 (Life Technologies); Site_1:
/note-minimum site for the following adaptors:
/note-minimum site for the following adaptors:
/note-minimum site for site for the following adaptors:
/note-minimum site for site f
   485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Technologies."
291 c 248 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="IMAGE:6190537"
/clone_lib="Lupski_sympathetic_trunk"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9.99e-58
853.00
95.71%
95.71%
22.81%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 887
156
                                                                                                                                              -GTGTGAACCAGAAGG
                                                                                                                                                                                                                                                                                     422
                                                                                                                                                                                                                                                                                                                                                            533
                                                                                                                                                                                                                                                                                                                                                                                                                                   362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
```

S

õ

Score:

В

Search completed: May 8, Job time : 2130 secs

2003, 14:51:18

S

밁

ş 밁 õ

밁

õ 밁

밁

В

S 밁 Š 밁

S

```
GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
```

Database : N_Gen 1: 2: 3: 4: 4: 5: 5: 6: 7: 9: 9: 10: 11: 11: 11: 11: 11: 11: 11: 11: 11	Command line parameters: -MODEL-frame+_p2n.model -Q-/cgn2_1/USPTO_spool/U -DB-N_Geneseq_1101002 -QF -LOOPEXT-0 -UNITS-bitsLIST-45 -DOCALION-200MODEL-DCAL -OUTTMT-pto -USER-US09821883_eCGN_1NO_XLPXY -NO_MMAP -LARG-WARN_TIMEOUT-30 -THREAD -YGAPOP-10 -YGAPEXT-0.5	Post-processing: Mini Maxi List	Minimum DB seq length: Maximum DB seq length:	Total number of hits	Searched: 2185239	Scoring table: BLOSUM6 X9APOP Y9APOP F9APOP Delop	Title: US-09 Perfect score: 3739 Sequence: 1 MRA	Run on: May	OM protein - nucleic
Geneseq_101002:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1982.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1984.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1985.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1989.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1989.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1995.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1995.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA2000.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:* /SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*	<pre>Dommand line parameters: MODEL-frame+_p2n.model -DEV-xlp MODEL-frame+_p2n.model -DEV-xlp Co-/cgn2_1/UsPTO_spool/Us09921883/runat_28042003_104748_14558/app_query.fasta DB-N_Geneseq_101002 -OFMT-fastap -SUFFIX-p2n.rng -MINMATCH-0.1 -LOOPCL-0 DB-N_Geneseq_101002 -OFMT-fastap -SUFFIX-p2n.rng -MINMATCH-0.1 -LOOPCL-0 LOOPEXT=0 -UNITS-bits -START=1 -END1 -MATRIX-blosum62 -TRANS-human40.cd1 LIST-45 -DOCALIGN-200 -THR_SCORE-pct -THR_MAX-100 -THR_MIN-0 -ALIGN-15 MODE-LOCAL -OUTFMT-pto -NORM-ext -HEASIZE-500 -MINLEN-0 -MAXLEN-2000000000 USER-US09821883_GCGN_1_396_Grunat_28042003_104748_14558 -NCPU-6 -TCPU-3 NO_XLPXY -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -LONGLOG -DEV_TIMEOUT=120 WARN_TIMEOUT=30 -THREADS-1 -XGAPOP-10 -XGAPEXT-0.5 -FGAPOP-6 -FGAPEXT-7 VGAPOP-10 -YGAPEXT-0.5 -DELOP-6 -DELEXT-7</pre>	Minimum Match 0% Maximum Match 100% Listing first 45 summaries	h: 0 h: 200000000	satisfying chosen parameters: 4370478	1239 seqs, 1125999159 residues	3UM62 pop 10.0 , Xgapext 0.5 pop 10.0 , Ygapext 0.5 pop 6.0 , Fgapext 7.0 pp 6.0 , Delext 7.0 pp 6.0 , Delext 7.0	-09-821-883-2   39   MRAAPLLLARAASLSLGFLFЕРVQEGAPPPPAAAHHHHHH 690	7, 2003, 22:19:33; Search time 1592 Seconds (without alignments) 976.055 Million cell updates/sec	search, using frame_plus_p2n model
	1.839				· .		•		

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

		44	43	42												•		28																	10	9	- σο	7	σı		4.	ω	2		No.		
	1182	1183	1183	1183	1188	1199.5	1587	1614.5	1680.5	1961	1961	1961	1968	1968	2092.5	2129	2130	2188.5	2258.5	2334.5	2396.5	2405.5	2405.5	2405.5	2405.5	2405.5	2405.5	2410.5	2410.5	2410.5	2415	2418	2410	77.57	2423	2423	2423	2423	2423		2959.5	ь,	3473.5	3739	Score		
	1.	31.6	1	٠	۳			43.2		'n			52.6		σ.		7.	58.5	٥.	62.4	٠.	٠	٠	64.3	٠.	٠.	64.3	٠.	64.5	٠.	^ .	٠.	- :	٠.	64.8		.4			4.		9	•	10	Match	عو	
	651	1773	1767	1755	1806	1191	867	1872	2871	3771	3771	3771	3955	3955	3600	2763	2781	1437	2385	3678	4299	3768	3768	3768	3768	3768	3768	3768	3768	3768	9274	2773	7777	4/70	4530	4530	4530	4530	4530	4530	1692	1665	2091	2070	Length D		
	. 22	24	24	24	24	22	22	11	21	24	22	21	21	16	21	24	24	22	18	24	14	24	24	24	22	20	17	24	24	21	22	2 6	) k	4 6	24	24	22	21	18	16	22	22	22	22	: B		
ALIGNMENTS	AAD21572	74	AAD32744	AAD32746	AAD32745	AAD21573	AAD21571	AAQ06828	AAZ50586	ABA92251	AAH42210	AAA89737	AAA89753	AAT01590	AAA89736	ABA92252	ABA92253	AAD21568	AAT72725	ABK86207	AAQ46083	ABK10730	ABA92250	AAD32743	AAH23392	AAX01912	AAT40739	ABK14058	ABL91709	AAA09455	AAF24297	AAD38904	AA731071	ABK14007	ABK83918	ABN85585	AAD19731	AAZ60815	AAT71253	AAT01585	AAD21566	AAD21564	15	AAD21565	ID		COLUMN
	an HE	for th	for	cDNA for		NY-ESO-IC-H	Mature human HER-2	0	Fv-erbB2EC	Mouse Her-2/neu cD	Nucleotide sequenc	m	Kat HER-2/neu prot	Rat neu promoter.	HER-	æ	Her-2/neu extracel	=		cDNA encoding huma	nce encodir	Human Her-2/neu DN	Her-2/neu	Her-2/neu	HER-2/neu	⇒.	/neu oncogen		polynucleo	n heregulin	transgene		במאה פווכטסדווק כוופ	ODERA (EI	CDNA		sine	Nucleotide sequenc	n HER2	/neu (EF	HER500	HER500		man HER500-	Description		

## ALIGNMENTS

jį	1707				
Ŭ	) AAD21565 st	standard; DNA;	DNA;	2070 BP.	BP.
• • •	AAD21565	•			
•	AAD21565;	••			

Human HER500-hGM-CSF fusion DNA construct. 28-JAN-2002 (first entry)

RESULT 1
AAD21565
ID AAD2
XX
AC AAD2
XY
DT 28-J
XX
Huma
XX
Immu
KW immu
KW immu
KW immu
KW denci
KW HER:
KW HER:
KW HER: Immunostimulatory fusion protein; IFP; antigen component; therapy; immunostimulatory component; T-cell mediated immune response; DC; dendrittic cell; colon cancer; breast carcinoma; ovarian cancer pape protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; GM-CSF; HER-2 protein; granulocyte-macrophage colony stimulating factor; HER500-hGM-CSF fusion DNA; ds.

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                           CC The invention relates to immunostimulatory fusion proteins (IFP) and CC nucleic acid molecules encoding such proteins. The IFPs comprise a CC polypeptide antigen component and an immunostimulatory component derived CC from the intracellular domain of HER-2 protein which is effective to CC elicit a protective dendritic cell (DC) induced T-cell mediated cellular cmune response to the antigen. IFP or superactivated dendritic cells CC are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer CC associated with a particularly antigen. The present sequence is HER500 hGM-CSF fusion DNA construct which comprises DNA molecules encoding CC human PAP signal sequence, mature PAP protein, an Ala Arg linker, human CC HER-2 signal sequence, mature HER-2 membrane distal, extracellular and CC intracellular domains, an Ala Ala linker, a mature human granulocyte- macrophage colony stimulating factor (GM-CSF) sequence and a CC c-terminal tag.
         Š
                           밁
                                         S
                                                             В
                                                                             Ş
                                                                                                                                                         Pred.
Score:
                                                                                                                                                                                             US-09-821-883-2
                                                                                                                                                                           Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chimeric
Chimeric
                                                                                                                                                                                                                                                                                                                                                                              of A
                                                                                                                                                                                                                                                                                                                                                                                                                                    Laus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-MAR-2001;
                                                                                                                                                                  ĕ
                                                                                                                                                                                            Sequence 2070
                                                                                                                                                                                                                                                                                                                                                    Example
                                                                                                                                                                                                                                                                                                                                                                      19
                                                                                                                                                                                                                                                                                                                                                                                                                                                      (DEND-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200174855-A2
           4
                            61
                                            21
                                                               -
                                                                                                                                                                                                                                                                                                                                                                   immunostimulatory fusion protein comprising the intracellular HER-2 and an antigen elicits an immune response to the antigen useful for the treatment of associated cancer associated -
                         SerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThr
                                                                                                                                                                                                                                                                                                                                                                                                         2001-662965/76.
DB; AAE13109.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DENDREON
                                                                                                                                                                                                                                                                                                                                                                                                                                   Vidovic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . .
                                                                                                                                                                                                                                                                                                                                                    Page 28;
                                                                                                  (1-690)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001WO-US10515
                                                                                                                                                                                             BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product= "Human HER500-hGM-CSF fusion protein conscomprising human PAP signal sequence, mature PAP par an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular domains, an Ala Ala linker, a mature human GM-CSF sequence and a C-terminal tag" /note= "CDS does not include stop codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                   Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORP
                                                                                                                                                                                             425
                                                                                                                   7.02e-156
3739.00
100.00%
100.00%
100.00%
22
                                                                                                 x AAD21565
                                                                                                                                                                                                                                                                                                                                                  59pp;
                                                                                                                                                                                            P
                                                                                                                                                                                           707
                                                                                                                                                                                                                                                                                                                                                   English.
                                                                                                                                                                                           Ç
                                                                                                  (1-2070)
                                                                                                                                                                                             568
                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                            <u>ი</u>
                                                                                                                                                                                            370
                                                                                                                                                                                           Η.
                                                                                                                                                                                           0
                                                                                                                   2070
690
0
                                                                                                                                                                                            other;
                                                                                                                                                                                                                                                                                                                                                                      ed -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in construct
PAP protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein,
         60
                           120
                                           40
                                                             60
             δ
                                                  δÃ
                                                                      밁
                                                                                      .0
                                                                                                         В
                                                                                                                          Ş
                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                     Ş
В
                                   밁
                                                                                                                                                               Qy
                                                                                                                                                                                 밁
                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
 1201
                                                                       1081
                                                                                                          1021
                  401
                                                                                        361
                                                                                                                                              961
                                                                                                                                                                321
                                                                                                                                                                                   901
                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                   221
                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                        281
                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                           261
                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                            161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
AspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerPro
                                                                      SerSerThrArgSerGlyGlyGlyAspLeuThrLeuGlyLeuGluProSerGluGlu
                                                                                                                                             ThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGly
                                                                                                                                                                                                                                                                                                                                                                                                      GACCTGGGAATGGGGGCAGCCAAGGGGCTGCAAAGCCTCCCCACACATGACCCCAGCCCT
                                                                                                                                                                                   ATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGTGACTGCCTGTCCCTAC
                                                                                                                                                                                            MetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyr
                                                                                                                                                                                                                                                                                                                                 SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGln
                                                                                                          AGCTCATCTACCAGGAGTGGCGGTGGGGACCTGACACTAGGGCTGGAGCCCTCTGAAGAG
                                                                                                                                                                                                                                                                                                                                                                    ACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATGTGTAAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCTGCAGGATATCCAGGAGGTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCGACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGTCCCGAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                  420
                                                    400
                                                                       1140
                                                                                                          1080
                                                                                                                                               1020
                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                        380
                                                                                                                            360
                                                                                                                                                                340
                                                                                                                                                                                   960
                                                                                                                                                                                                     320
                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                           280
                                                                                                                                                                                                                                                                                                              260
                                                                                                                                                                                                                                                                                                                                720
                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                      220
                                                                                                                                                                                                                                                                                                                                                                                                                          200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
```

```
RESULT
AAD2156
ID AV
XX
XX
AC AV
XX
DT 28
DT 28
XX
DE H1
XX
XX
IN
KW 11
KW 16
KW 26
KW 16

                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
Immunostimulatory fusion protein; IFP; antigen component; thérapy; immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; GM-CSF; HER-2 protein; granulocyte-macrophage colony etimulation feature.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1261
                                                                                                                                                                                                      28-JAN-2002
                                                                                                                                                                                                                                                                                                  AAD21567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1321
                                                                                                                                                                                                                                                                                                                                                                                                                                       189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GluThrSerCysAlaThrGlnIleIleThrPheGluSerPheLysGluAsnLeuLysAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LeuLysGlyProLeuThrMetMetAlaSerHisTyrLysGlnHisCysProProThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LeuGlyLeuAspValProAlaAlaAlaProAlaArgSerProSerProSerThrGlnPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluArgGlyAlaProProSerThrPheLysGlyThrProThrAlaGluAsnProGluTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProProProAlaPheSerProAlaPheAspAsnLeuTyrTyrTrpAspGlnAspProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGlyAlaAlaProGlnProHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGGCCAAGACTCTCCCCCAGGGAAGAATGGGGTCGTCAAAGACGTTTTTTGCCTTTTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ArgAlaLysThrLeuSerProGlyLysAsnGlyValValLysAspValPheAlaPheGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProAlaAlaHisHisHisHisHisHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAACTTCCTGTGCAACCCAGATTATCACCTTTGAAAGTTTCAAAGAGAACCTGAAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCAAGGGCCCCTTGACCATGATGGCCAGCCACTACAAACAGCACTGCCCTCCAACCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGGTCTGGACGTGCCAGCGGCCGCACCCGCCCGCTCGCCCAGCCCCAGCACACACCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGCGGGGGGCTCCACCCAGCACCTTCAAAGGGACACCTACGGCAGAGAACCCCAGAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTCCTGCCTTCAGCCCAGCCTTCGACAACCTCTATTACTGGGACCAGGACCCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGCCGTGGAGAACCCCGAGTACTTGACACCCCAGGGAGGAGCTGCCCCTCAGCCCCCAC
                                                                                                                                                                                                                                                                                                  standard;
                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                DNA;
                                                                                                                                                            fusion
                                                                                                                                                                                                                                                                                                  2091
                                                                                                                                                         DNA construct comprising OVA-derived
                                                                                                                                                                                                                                                                                                ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                       690
                                                                                                                                                       peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٠,٠٠٠
```

B 8

MetArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPhe

Query Match: DB: US-09-821-883-2

(1-690)

×

AAD21567

(1-2091)

Gaps:

. . Percent Similarity: Best Local Similarity:

3.17e-144 3473.50 94.42% 91.70% 92.90%

Conservative: Mismatches: Indels:

2091 641 19 28 11

Matches:

Pred. Score:

No.:

```
Chimeric
Chimeric
Chimeric
                                                            are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HERS00 rGM-CSF fusion DNA construct which comprises DNA molecules encoding human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER membrane distal extracellular domain, an Ala linker, an ovablumin (OVA)-derived immunodominant octapeptide, HER-2 membrane distal intracellular domain, an Ala linker, a mature.
                                                                                                                                                                        The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells
 Sequence
                                                                                                                                                                                                                                                                                                                   An immunostimulatory fusion protein comprising the intracellular domain of HER-2 and an antigen elicits an immune response to the antigen and is useful for the treatment of associated cancer associated -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-MAR-2000; 2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ovalbumin-derived octapeptide;
                                                                                                                                                                                                                                                                                      Example 1;
                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-OCT-2001
                               granulocyte-macrophage
a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                   2001-662965/76.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DENDREON CORP
 2091
                                                                                                                                                                                                                                                                                     Page 29; 59pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product= "Human HER500-rGM-CSF fusion protein construct comprising human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular domáin, an Ala linker, an ovalbumin (OVA)-derived immunodominant octapeptide, HER-2 membrane distal intracellular domain, an Ala linker, a mature rat GM-CSF sequence and a C-terminal tag" /note= "CDS does not include stop codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
 447
                                                                                                                                                                                                                                                                                                                                                                                                                                   Graddis
 ۶
 699
                                                                                                                                                                                                                                                                                      English.
                                              colony
 Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                   Η,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OVA; rat; HER500-rGM-CSF fusion
 559
                                              stimulating
 <u>ი</u>
 386
 H
 0
                                              factor (GM-CSF)
other;..
                                              sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ÷
```

```
Ъ
            1081
                                  1021
                       352
                                            332
                                                       961
 372
                                                                 321
                                                                             106
                                                                                      301
                                                                                                  841
                                                                                                            281
                                                                                                                                 261
                                                                                                                                                                 661
                                                                                                                                                                                       601
                                                                                                                                                                                                             541
                                                                                                                       781
                                                                                                                                            721
                                                                                                                                                       241
                                                                                                                                                                            221
                                                                                                                                                                                                 201
                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                            161
                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                 141
                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                  81
                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                   21
          SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla
                                                                                                                                                                                                           GlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeuGln
                                                                                                                                                                                           ThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGly
                                                                                                                                                                                                                                                     H1sLeuAspMetLeuArgH1sLeuTyrGlnGlyCysGlnValValGlnGlyAsnLeuGlu
                                                                                                                                                                                                                                                                                                                                                                                       CTGCTTTTTTTCTGGCTAGACCGAAGTGTACTAGCCAAGGAGTTGGCGCGCGGGGCCGCG
                                                                                                                                                                                      ACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATGTGTAAGGGC
                                                                                                                                                                                                                                                                                                                                             CACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGGTGCAGGGAAACCTGGAA
                                                                                                                                                                                                                                                                                                                                                                                             LeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAla
           1140
                                 1080
                                                      1020
                                                                                                 900
                                                                                                                                                                                                                                                                 160
                                                                                                                                            780
                                                                                                                                                     260
                                                                                                                                                                 720
                                                                                                                                                                           240
                                                                                                                                                                                      660
                                                                                                                                                                                                 220
                                                                                                                                                                                                            600
                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                  40
```

S

В

B 8

δ

β Q

δ 멍 Ş

밁

Ş 밁 δ 밁 S В Ş 밁 ş 8 δ B Ş В δ 밁 Ş В δõ 밁 õ ₽ S ₽ δ

AAD21564

standard;

DNA;

1665 ВP

HER500

fusion

DNA entry)

```
:
В
RESULT 3
AAD21564
ID AAD2
XX
AC AAD2
XX
AC AAD2
XX
AC AAD2
XX
AC Huma
                                 밁
                                     δ
                                            Вþ
                                                 δÃ
                                                         밁
                                                             Q
                                                                    В
                                                                          δÃ
                                                                                 밁
                                                                                      Qγ
                                                                                             ₽
                                                                                                  Ş
                                                                                                              δÃ
                                                                                                                     밁
                                                                                                                          δõ
                                                                                                                                 밁
                                                                                                                                      Š
                                                                                                                                                 δÃ
                                                                                                                                                        В
                                                                                                                                                              Qy
                                                                                                                                                                    밁
                                                                                                                                             밁
                                                                                                                                                                          õ
                                                                                                                                                                                 밁
                                                                                                                                                                                      δ
                                                                                                                                                                                             В
                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                         Вb
                                                                                                                                                                                                              Š
                                                                                                                                                                                                                      밁
                                 2041
                                             1981
                                                         1921
                                                                     1861
                                                                                             1741
                                                                                                         1681
                                                                                                                     1621
                                                                                                                                                         1441
                                                                                                                                                                     1381
                                                                                                                                                                                 1321
                                                                                 1801
                                                                                                                                 1561
                                                                                                                                                                                                                      1141
                                                                                                                                                                                             1261
                                                                                                                                                                                                         1201
                                                                                                                                             1501
                                       672
                                                   652
                                                               632
                                                                           612
                                                                                       592
                                                                                                   572
                                                                                                               552
                                                                                                                          532
                                                                                                                                       512
                                                                                                                                                   492
                                                                                                                                                               472
                                                                                                                                                                           452
                                                                                                                                                                                       432
                                                                                                                                                                                                   412
                                                                                                                                                                                                               392
                                 CAGGGAGGAGCTGCCCCCAGCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGACAAC
                                                                                                                                                GlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAspAsn
                                                                                                                                                        690
                                                                          631
                                                                                            1800
                                                                                      611
                                                                                                                         551
                                                                                                                                                  511
                                                                                                                                                                    1440
                                                   671
                                                                                 1860
                                                                                                   591
                                                                                                                     1680
                                                                                                                                1620
                                                                                                                                             1560
                                                                                                                                                        1500
                                                                                                                                                               491
                                                                                                                                                                           471
                                                                                                                                                                                 1380
                                                                                                                                                                                             1320
                                                                                                                                                                                                   431
                                                                                                                                                                                                                           ^ ių
                                                                                                                                                                                       451
```

```
Alignment
Pred. No.:
Score:
                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                 В
                                     Ş
Ş
                                                                  US-09-
                                                                                                                                                                                                  immune response to the antigen. IFP or superactivated dendricic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion DNA construct which comprises DNA molecules encoding human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular domains and a C-terminal tag.
                                                                                                                                                                                                                                                                         nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HBR-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or suppression proteins of the antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           dendritic
PAP protei
                                                                                                                                                                                                                                                                                                                                                                            An
of
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Laus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-MAR-2001; 2001WO-US10515.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chimeric - Chimeric -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HER-2
                                                                                                                                                                                Sequence 1665
                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (DEND-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200174855-A2
                                                                                                                                                                                                                                                                                                                                                       Example
                                                                                                                                                8
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Immunostimulatory fusion protein; IFP; antigen immunostimulatory component; T-cell mediated im
                                                                   821-883-2
 21
                                            _
                                                                                                                                                                                                                                                                                                                                                                         immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    dritic cell; colon cancer; breast carcinoma; ovarian cancer;
protein; Ala Arg linker; membrane distal extracellular domain;
brane distal intracellular domain; C-terminal tag; human;
-2 protein; HER500 fusion DNA; ds.
                     LeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                       2001-662965/76
DB; AAE13108.
                                                                                                                                                                                                                                                                                                                                                    3; Page 27; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DENDREON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapie
Synthetic.
                                                                   (1-690)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-193504P
                                                                                                                                                                                 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product= "Human HER500 fusion protein construct comprising human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular domains and a C-terminal tag" /note= "CDS does not include stop codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag=
                                                                                                                                                                                 330
                                                                                        2.12e-122
2974.00
99.46%
99.46%
79.54%
                                                                  x AAD21564
                                                                                                                                                                                 ?
                                                                                                                                                                                 568
                                                                                                                                                                                 ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Η,
                                                                   (1-1665)
                                                                                                                                                                                 465
                                                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                G;
                                                                                                                                                                                 302
                                                                                                                                                                                 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immune response;
                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             component;
                                                                                       1665
0 554
1 3
                                                                                                                                                                                 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                therapy;
 40
                      60
                                          20
       δÃ
                                 B
                                                     δÃ
                                                                             В
                                                                                                 Ş
                                                                                                                        망
                                                                                                                                              õ
                                                                                                                                                                     밁
                                                                                                                                                                                       δõ
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                              밁
                                  1081
                                                                             1021
          381
                                                       361
                                                                                                   341
                                                                                                                        961
                                                                                                                                              321
                                                                                                                                                                     901
                                                                                                                                                                                           301
                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                        281
                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                   261
                                                                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                           221
                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GluAlaProArgSerProLeuAlaProSerGluGlyAlaGlySerAspValPhcAspGly
                                                                            GGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAACACGACACGTTTGAGTCC
                                                                                                                                                                                                                             GlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSer
                                                                                                                                                                                                                                                             GlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGluGlnCysAla
                                                                                                                                                                                                                                                                                                                                                                 SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla
                                                                                                                                                                                                                                                                                                                                                                                                            ThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGly
                                                                                                                                                                                                                                                                                                                                                                                                                                           ValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAsp|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGCTTTTTTTCTGGCTAGACCGAAGTGTACTAGCCAAGGAGTTGGCGCGCGGGCCCGCG
AspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerPro
                                  ATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGTGACTGCCTGTCCCTAC
                                                                                                                                                                                MetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyr
                                                                                                                                                                                                                                                                                                                                                     ACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATGTGTAAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGACAATGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCACTGCAGAGGCTGCGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCTGCAGGATATCCAGGAGGTGCAG
                                                                                                                                                                                                                                                                                                           400
                                                                                                                                              340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
```

220,

600 200 540 180 480 160 420 120

300

360

240 80 180 60

660

240

1200

1140

380

1080 360, 1020 960 320 900

300

840

280

780

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                       Chimeric
Chimeric
                                                                                                                                                                                                                                                                                      immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; OVA; HER-2 protein; ovalbumin-derived octapeptide; HER500 fusion DNA; d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
 30-MAR-2000;
                      30-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                    Immunostimulatory fusion protein; IFP; antigen component;
                                                                                                                                                                                                                                                                                                                                                                                                     28-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAD21566 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LeuGlyLeuAspValProAlaAlaAlaProAlaArgSerProSerProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GluArgGlyAlaProProSerThrPheLysGlyThrProThrAlaGluAsnProGluTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTCCTCCTGCCTTCAGCCCAGCCTTCGACAACCTCTATTACTGGGACCAGGACCCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGlyAlaAlaProGlnProHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlaProLeuThrCysSerProGlnProGluTyrValAsnGlnProAspValArgProGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGGGTCTGGACGTGCCAGCGGCC-----GCACA-TCACCATCACCATCA 1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCGGGGGCTCCACCCAGCACCTTCAAAGGGACACCTACGGCAGAGAACCCAGAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ProProProAlaPheSerProAlaPheAspAsnLeuTyrTyrTrpAspGlnAspProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ArgAlaLysThrLeuSerProGlyLysAsnGlyValValLysAspValPheAlaPheGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGGCCAAGACTCTCCCCCAGGGAAGAATGGGGTCGTCAAAGACGTTTTTGCCTTTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCCCTTCGCCCGAGAGGGCCCCTCTGCCTGCTGCCGACCTGCTGGTGCCACTCTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . .
                                                                                                                                                                                                                                                       Homo sapiens.
Unidentified.
2000US-193504P
                       2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                          fusion DNA construct comprising OVA-derived octapeptide
                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                /product- "Human HER500 fusion protein construcomprising human PAP signal sequence, mature Forotein, an Ala Arg linker, human HER-2 signal
                                                                                                                    sequence, mature HER-2 membrane distal extracellular domain, an Ala linker, an ovalbumin (OVA)-derived immunodominant octapeptide, HER-2 membrane distal intracellular domain and a C-terminal tag"
                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                        /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA; 1692
                                                                                                                                                                                                        a
                                                                                                         "CDS
                                                                                                                                                                                         construct
                                                                                                                                                                                                                                                                                                                                     therapy;
onse; DC;
                                                                                                                                                                                PAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1320
```

LeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsnProGlnLeu

180

. .

GTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTGTAGACAATGGAGAC
ProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGln

421 161 141

361

121

ValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAsp

140

420

GlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIle

GGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCACTGCAGAGGCTGCGGATT

```
Best Local Si
Query Match:
DB:
В
                          Ş
                                                           В
                                                                                   Ş
                                                                                                                    멍
                                                                                                                                                Š
                                                                                                                                                                               밁
                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-821-883-2 (1-690) x AAD21566 (1-1692)
                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid molecules encoding such proteins. The IFPS comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion DNA construct which comprises DNA molecules encoding human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 membrane distal extracellular domain, an Ala linker, an ovalbumin (OVA)-derived immunodominant octapeptide, HER-2 membrane distal intracellular domain and a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to immunostimulatory fusion proteins (IFP) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    An immunostimulatory fusion protein comprising the intracellular of HER-2 and an antigen elicits an immune response to the antigen is useful for the treatment of associated cancer associated -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 3; Page 28; 59pp; English.
 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (DEND-)
                                                                                                                       121
                                                            181
                               81
                                                                                          61
                                                                                                                                                  41
                                                                                                                                                                               61
                                                                                                                                                                                                           21
                                                         LeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArġGlyAlaAla
                                                                                                                                                                                                                                                        MetargAlaAlaProLeuLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPhe
                                                                                                                                  SerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThr
                                                                                                                      TCGACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGTCCCGAGACC
                                                                                                                                                                               CTGCTTTTTTTCTGGCTAGACCGAAGTGTACTAGCCAAGGAGTTGGCGCGCGGGGCCGCG
                                                                                                                                                                                                                                          ATGAGAGCTGCACCCCTCCTCGTGGCCAGGGCAGCCTTAGCCTTGGCTTCTTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-662965/76.
DB; AAE13110.
                                                                                                                                                                                                                                                                                                                                                             Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DENDREON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     338 A; 573 C;
                                                                                                                                                                                                                                                                                                                                9.3e-122
2959.50
97.88%
97.88%
79.15%
                                                                                                                                                                                                                                                                                                                                                                                                                                                     470
                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     G; 311 T; 0 other;
                                                                                                                                                                                                                                                                                                                              1692
554
0
1
1
12
                                                                                                                                                                                                           40
                             100
300
                                                           240
                                                                                       80
                                                                                                                      180
                                                                                                                                                  60
                                                                                                                                                                               120
                                                                                                                                                                                                                                         60
```

```
1501
                                                   1441
                                                                               1381
                                                                                                           1321
                                                                                                                                        1261
                                                                                                                                                                     1201
                                                                                                                                                                                                  1141
                                                                                                                                                                                                                                                           1021
                                                                                                                                                                                                                               1081
                                   492
                                                                 472
                                                                                             452
                                                                                                                         432
                                                                                                                                                      412
                                                                                                                                                                                   392
                                                                                                                                                                                                                372
                                                                                                                                                                                                                                             352
                                                                                                                                                                                                                                                                        332
                                                                                                                                                                                                                                                                                       961
                                                                                                                                                                                                                                                                                                     321
                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
        512
                                                                                                                                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                            261
                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                    221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                 SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGly
                             GlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAspAsn
                                                                                                                                                                                                                                                                                              AsnTyrLeuSerThrAspValGlySer------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGlnLeuAlaLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGly
                                                                                                                                                                                                                                                                                       AACTACCTTTCTACGGACGTGGGATCCGCTAGCATCATTAATTTCGAGAAGTTGGGCGCT
                                                                                                                                                                                                                                                                                                                   ATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCCAGCTGTGTGACTGCCTGTCCCTAC
                                                                                                                                                                                                                                                                                                                           MetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAGCTGGCTCTC
                     CAGGGAGGAGCTGCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGACAAC
                                                                                                                                                                                                                                                                                                    ·GlyAla
                                                                                                           1380
                                                                                                                                        1320
                                                                                                                                                     431
                                                                                                                                                                                  411
                                                                                                                                                                                                  1200
                                                                                                                                                                                                                             1140
                                                                                                                                                                                                                                                                                       1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                  1500
                                                                              1440
                                                                                                                                                                     1260
                                                                                                                                                                                                                                                          1080
                      1560
                                                                491
                                                                                            471
                                                                                                                         451
                                                                                                                                                                                                                391
                                                                                                                                                                                                                                            371
                                                                                                                                                                                                                                                                        351
                                                                                                                                                                                                                                                                                                    331
                                                                                                                                                                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                                                                                                                                                                                       260
                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           200
        531
```

Ş

Ş 밁 Š В Š 밁 Š 밁 Ş 밁 õ В Ş 밁 Š 밁 δ В δ В δ В

Alignment Pred. No.: Score:

Percent Similarity:
Best Local Similarity:
Query Match:

8.15e-98 2423.00 41.14% 40.75% 64.80%

Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:

g

```
RESULT 5
AATOL 5
ID AATO
XX AATOL 6
AX AATOL 6
AX AATOL 6
AX AATOL 7
AX AATOL 7
AX AATOL 7
AX AATOL 7
AX HEI-
XXX HEI-
XXX HEI-
XXX HEI-
XXX HOMO
OS HOMO
OS HOMO
OS HOMO
PN WO95
XX  19-A
XXX 19-A
XXX L19-A
XXX MPI:
XXX D15-A
XX D15-A
XXX D15-A
XX D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                              The Erb-B2 gene is one of the primary genes responsible for the transition of normal breast epithelial cells towards carcinoma in call and the subsequent development of invasive and metastatic cancer. HPBF (see AAR77093-94), the Erb-B2 promoter binding protein, induces cell division on binding to the promoter. In a method for greater success in early identification and treatment of breast cancer, the initation step for Erb-B2 gene activity is identified. This method involves determining the presence of HPBF in a biopsy from the subject, where the presence of HPBF (relative to its absence in a normal control) indicates the presence of cancer and a decreased chance of long-term survival. Binding of HPBF to the promoter can be inhibited using antisense oligonucleotides or a non-genomic nucleic acid that binds to HPBF; these oligos can be expressed from retro virus or other gene therapy vectors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New purified protein binding to the ERBB2 gene promoter - to cell proliferation, diagnostic of breast cancer, also related antibodies, nucleic acid, assays and methods for screening
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Her-2/neu; Erb-B2; c-erbB-2; oncogene; DNA binding protein; HPBF; Erb-B2 promoter binding protein; tumour enhancer factor; breast cancer diagnosis; prognosis; antisense oligonucleotide; retro virus vector; gene therapy vector; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAT01585
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Page 52-54; 69pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19-APR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sn (HSSD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CA-TCACCATCACCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ArgSerProSerProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ή,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (ERBB2/c-erbB-2) gene sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEPT HEALTH & HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
   BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94US-0229515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 95WO-US04953
   922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA; 4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entry)
A; 1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1691
   Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SERVICES
   1346
   ဂ္
   980
   7
   0
   other;
                                                                                                                                                                                                                                                                                                                                                                protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1620
```

2 ArryllahaProLeuclanianArrylla	2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	<del>-</del>		
2 ArryllablaProcentedautaniancyAna   2 ArryllablaProcentedautaniancyAna   2 ArryllablaProcentedautaniancyAna   2 ArryllablaProcentedautaniancyAna   2 ArryllablaProcessor   2 ArryllablaProcessor	2	νο	9	o O
2 ArgAlaka Popularical Levil Argala	2	Db		д, ,
2 ArgylaklabroLuculatualtantgala	2	Qy	CysProTyrAsnTyrLeuSerThrAspValGlySer	δ O
2 ArgAlaAlaProLucialLanJanargala	6	Db		뭐
2 ArgAlaAlaProleuLeullankargAla	2	Qy	8 PheGluSerMetProAsnProGluGlyArqTyrThrPheGlyAlaSerCysValThrAla 3	δō
2 ArgAlaAlaProleuteauteaulaArgAla	2005 GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGGACCTGGAT	рь		망
2 ARGALANATOL-CHALLALANARYALA	2	ογ	8 AsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTvrAsnThrAspThr 29	õ
2 ArgAlaAlaProLeuiceulleuillaryAla	4	Db		밁
2	29	Qy	8 GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe 2	ğ
2	5 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	Db		Db .
2 Arghlanaproceuceuceuchtayagha	329	Qy	8 ValCysAlaGlyGlyCysAlaArqCysLysGlyProLeuProThrAspCysCysHisGlu 2	Ş
2 ArgalalaproLeuLeuLeulalayagala	1825 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA	DЬ	45 TGTAAGGGCTCCCGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGCCTGACGCGCACT 8	D
2 ArghlalaProLeuLeuLullat, apala	29	Qy	8 CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr 2	δō
2 ArgalalaProLeuLeulalaArgala	6	дь	###	망
2 ArgAlahaProLeuLeullakrgAla	N	Qy	98 LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet	δ
2 ArgAlaAlaProLeuLeuLaLargAla	05	ф	 5 CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAG 6	밁
2 ArgAlaBaProLeuLeuLeuAlaArgAla	29	Qy	<pre>8 ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln 1</pre>	δō
2 ArgAlaAlaProLeuLeulanlaArgAla	4	- B	5 GAGCTGCAGCTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAAC 6	망
2 ArgAlaAlaProLeuLeuAlaArgAla	N	Qy	8 GluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsn 1	δō
2 ArgAlaAlaProLeuLeuAlaArgAla	8	Дb	 5 AATGGAGACCCCCTGAACAATACCACCCCTGTCACAGGGCCTCCCCAGGAGGCCTGCGG 5	ф
2 ArgAlaAlaProLeuLeuAlaArgAla	N	Qy	8 AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg 1	δō
2 ArgAlaAlaProLeuLeuAlaArgAla	N	Db	445 CTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGAC 5	DЬ
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	N	Qy	118 LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp 1	Ş
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	1465 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	מם		<b>d</b> d .
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	Ν	Qy	98 GluValGlnGlvTvrValieuTleAlaHisasnGlnValarcGlnValgroieuGlnArc 1	Q Q
2 ArgAlaAlaProLeuLeuAlaArgAla	1405 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT	рь		D .
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	N	Qy	78 AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln 9	Q Q
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	40-	Db	265 CCCGAGACCCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGGTGCAGGGA 3	망
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	329	Оу	58 ProGluThrHisLeuAspMetLeuArgHisLeuTvrGlnGlvCvsGlnValValGlnGlv 7	õ
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17		Db	205 GGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGT 2	망
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	N	· Qy	38 GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer 5	ρ
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	N	DЪ	154 GAGCTGGGGCCTTGTGCCGCTGGGGGCTCCTCCTCGCCCTCTTGCCCCCC 2	ДĎ
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	329	Qy	18 PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg 3	οy
2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	1165 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT	. Db	94 CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCGTGGGGGCCGGGAGCCGCAGTGAGCACCATG 1	_
			2 ArgAlaAlaProLeuLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 1	_

```
S
                                      Ş
                                                             밁
                                                                                 õ
                                                                                                        망
                                                                                                                           Ş
                                                                                                                                                 ₽
                                                                                                                                                                  Ş
                                                                                                                                                                                         밁
                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                       3265
                                                                                                                                                 3085
                                                                                                                                                                                           3025
                                                                                                                                                                                                                                                                                                                                                                 2785
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2365
                                                                                                        3145
                                                                                                                                                                                                                                   2965
                                                                                                                                                                                                                                                                              2905
                                                                                                                                                                                                                                                                                                                       2845
                                                                                                                                                                                                                                                                                                                                                                                                       2725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2245
                                           331
                                                                                     330
                                                                                                                             329
                                                                                                                                                                      329
                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
  351
                                      AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAsp
LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer 370
                                                                GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC
                                                                                                                                                                                         TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC
                                                                                                                                                                                                                                   GAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT
                                                                                                                                                                                                                                                                                                                      TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT
                                                                                                                                                                                                                                                                                                                                                               GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                       GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGCTTATGCCCTATGGCCTGCCTTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTGTACAAGGGCATC
                                                                                                        CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTG
                                                                                                                                                 GGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG
                                                                                  ------Gly
                                                                                                                                                                                                                                                                                                                                            . . . . . . . . . . .
                                         350
                                                                                  330
                                                                                                                                                 3144
                                                                                                                                                                                         3084
                                                                                                                                                                                                                                   3024
                                                                                                                                                                                                                                                                             2964
                                                                                                                                                                                                                                                                                                                      2904
                                                                                                                                                                                                                                                                                                                                                                                                       2784
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2544
                                                              3264
                                                                                                       3204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2304
                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                               2844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                      329
                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
```

```
RESULT 6
AAT7127
XX AAT7127
XX AAT7
XX HER2
XX HER2
XX HER2
XX HOMO
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3385
                                                                                                                                                                                                                                                                                                                                                                HER2; cognate transgene; human; tyrosine kinase-type receptor; lymphoma; cellular immunogen; cancer; self-determinant immunoreactivity; cancer vaccination; breast carcinoma; colon carcinoma; immunotherapy; proto-oncogene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAT71253 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3505
                                             England JM,
                                                                                        (UYAL-) UNIV
                                                                                                                                       19-JAN-1996;
                                                                                                                                                                                  13-JAN-1997;
                                                                                                                                                                                                                               24-JUL-1997
                                                                                                                                                                                                                                                                             WO9725860-A1
                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human HER2 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAT71253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AlaArgSerProSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATGTGAACCAGCCAGATGTTCGGCCCCCAGCCCCCTTCGCCCGAGAGGGCCCCTCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAAGCCTCCCCACACATGACCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGGCAGCCAAGGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGCCCGACCTGCTGGTGCCACTCTGGAAAGGGCCAAGACTCTCTCCCCAGGGAAGAAT
                                          Halpern
                                                                                            ALLEGHENY HEALTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first
                                                                                                                                       96US-0010262
                                                                                                                                                                                     97WO-US00582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВР
                                                                                            SCI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "GTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        550
```

WPI; 1997-384993/35

```
Pred. No.:
Score:
Score:
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
            õ
                                   В
                                                         Ş
                                                                                  밁
                                                                                                         õ
                                                                                                                                   밁
                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-821-883-2 (1-690) x AAT71253 (1-4530)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence represents the human HER2 cognate transgene (CTG).

Deletion of amino acids 1-731 of the encoded protein renders the CTG non-transforming. HER2 is a tyrosine kinase-type receptor. This sequence can be used in the cellular immunogen of the invention. The cellular immunogen of the invention. The cellular cancer, comprises host cells transfected with a construct containing at least one transgene related to the proto-oncogene and driven by a strong promoter. The product of the transgene induces immunoreactivity to host self-determinants on the product of proto-oncogene. The cellular immunogens are used for protective vaccination against cancer (e.g. carcinoma of breast or colon, or various lymphomas) and for immunotherapy of cancer. Use of the immunogen eliminates the need to isolate recognition of a determinant defined by a cancer-specific mutation and generates a systemic (anti-metastatic) response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 56-58; 81pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Proto-oncogene immunogen treatment of cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4530
                                      565
                                                                                   505
             178
                                                            158
                                                                                                           138
                                                                                                                                   445
                                                                                                                                                           118
                                                                                                                                                                                     385
                                                                                                                                                                                                                                    325
                                                                                                                                                                                                                                                                                  265
                                                                                                                                                                                                                                                                                                                                   205
                                                                                                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                          98
                                                                                                                                                                                                                                                          78
                                                                                                                                                                                                                                                                                                         58
                                                                                                                                                                                                                                                                                                                                                        38
                                                                                                                                                                                                                                                                                                                                                                                                        18
                                                                                                                                                                                                                                                                                                                                                                                                                                94
                                  ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGl
                                                                                 GluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArg
                                                                                                                                                                                                                                 GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer
                                                                                                                                                                                                                                                                                                                                                                                                                             ProGluThrH1sLeuAspMetLeuArgH1sLeuTyrGlnGlyCysGlnValValGlnGly
                                                                                                                                                                                                                                                                                                                                                                               GAGCTGGCGGCCTTGTGCCGCTGG------GGGCTCCTCCTCGCCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                              PheLeuPheLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                                                                                                                 CCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGCTGCAGGGA
                                                                                                                                                                                                                                                                                                                                GGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BP; 922 A; 1382 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8.15e-98
2423.00
41.14%
40.75%
64.80%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      used in vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1346 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     880 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for the prevention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4530
524.
5
736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
            h
            197
                                                                                                          157
                                                                                                                                  504
                                                                                                                                                          137
                                                                                                                                                                                  444
                                                                                                                                                                                                                                  38,
                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                                       77
                                                                                                                                                                                                                                                                                                                                                      57
                                                                                                                                                                                                                                                                                                                                                                               20,
                                                                                  564
                                                                                                                                                                                                                                                                                                                                26,
                                                                    Ş
                                                                                                                    Ş
                                                                                                                                                                    Ş
 밁
                    δÃ
                                                밁
                                                                                             밁
                                                                                                                                            망
                                                                                                                                                                                              В
                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                          Дþ
                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                1645
                                                                                                                                                                                                                                                                                              1345
                                                                                                                                                                                                                                                                                                                                                                                            1225
                                                                                                                                               1525
                                                                                                                                                                                                                                              1405
                                                                                                                                                                                                                                                                                                                                            1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ValCysAlaG1yG1yCysAlaArgCysLysG1yProLeuProThrAspCysCysHisGlu
 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG
                                                CGGCCAGAGGACGAGTGTGGGCCAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAG
                                                                                               ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC
                                                                                                                                                                                                                                              CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT
                                                                                                                                                                                                                                                                                             GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1404
                                                                                                                                                                                                                                                                                                                                            GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 1284
                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCCAGCTGTGTGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTAAGGGCTCCCGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGCCTGACGCGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATG
                                                                                                                                             AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC
                                                                                                                                                                                            AACCAAGAGGTGACAGCAGGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT
```

1224

329

1164

329

329

1104

1044

329

317 984 277

924

297

257 864

237

804

1704

329

1644

1584

329

329

1524

329

1464

밁

5 B 5

g Qy

р У

8 g 8

<u>.</u> :::-

551 AlaArgSerProSerPro 556	Qy	
TACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGT	dg d	7785 COAGATAGGGGGAAAGGTGGGGAAGATGATGATGATGATGAT
531 GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro 550	Oy	329 329
AACCTCTATTACTGGGACCAGGACCCACCAGGAGCGGGGGGGG		·2725 GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT 2784
Asnieuryr yr rpaspeinasperoeiog uaig y Ataeroeroser in relys		329 329
	2	2665 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 2724
. VOR. ORONALOS CONCOLAS CONTROLOS CONTROLES C	Cy Cy	329
GGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGTGCCCGTGGAGAAACCCCCCAGTACTTGACA		2605 TCCCAGGACCTGCTGAACTGGTGTATGCCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 2664
GlyvalValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr 4	YO Y	329 329
GCTGCCCGACCTGCTGGTGCCACTCTGGAAAGGGCCCAAGACTCTCTCCCCAGGGAAGAAT 3	Db	2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC 2604
AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsn 4	Qy	
3565 TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCGAGAGGGGCCCTCTGCCT 3624	. Db	TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA
431 TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 450	Qy	
CCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCTGAA	מם	329 329 329 329
ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu	O <sub>V</sub> 5	2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2424
391 GINSETLOUPTOTTHISASPETOSETFTOLEUGINATGTYVTSETGLUASPETCTTTVAL 410	. Cy	329 329
GANGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCCAAAGGGGGCTG		2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2364
GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeu	oy oy	329 329
CTGACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTGGCACCCTCC	· .	2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2304
LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer	Qy Qy	329 329
GCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGAC	da	2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2244
AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyAsp	Qy	329 329
GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC	Db	2125 GTTGGCATTCTGCTGGTCGTGGTCTTTGGGGGTGGTCTTTGGGGATCCTCATCAAGCGACGG 2184
	Oy .	
3145 CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTG 3204	рь	GACAAGGGCTGCCCCGCCGAGCAGAGAGCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG
329 329	Qy	329 329
3085 ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGGCCCAGCCAG	. Db	GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT
329 329	Qy	
3025 TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC 3084	Db	CGCTGCCCAGCGGTGTGAAACCTGACCTCTCTCTACATGCCCATCTGGAAACTTTCAGAT
329 329	Qy	
2965 GAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 3024	. Db	CCGGAGGCTGACCAGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT
329 329	Qy	
2905 GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG 2964	Db.	CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1
329 329	Qy	
2845 TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT 2904	Db	1765 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTGAATGCCAGG 1824
	Qy	329 329
	-	

밁

25 O O O O

```
RESULT 7
AAZ60815
         ş
                                  밁
                                                        δ
                                                                                                                                                                Pred.
                                                                               US-09-821-883-2 (1-690) x AAZ60815 (1-4530)
                                                                                                        DB:
                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                    Query
                                                                                                                                                                            Alignment Scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                     The present sequence represents a cognate transgene (CTG) which is created non-tumourigenic by deletion of amino acids 1-731. The CTG is used in the course of the invention. The specification describes a cellular immunogen for immunizing a host against the effects of the product of a target proto-oncogene which is associated with a malignanacy. The cellular immunogen comprises allogenic cells transfected with transgene construct comprising a transgene cognate to target proto-oncogene and a strong promoter. The cellular immunogen is useful for vaccinating a host against cancer by inserting the transgene construct into the body of the host for the expression of the transgene. The method of the invention is designed to target mutation-driven non-self determinants. The cellular immunogens induce reactivity for self-determinants in the over expressed product of tumour associated and over expressed proto-oncogenes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3919 ACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Cellular immunogens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-182543/16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (UYAL-) UNIV ALLEGHNEY HEALTH (HALP/) HALPERN M S. (ENGL/) ENGLAND J M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cognate transgene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAZ60815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Halpern MS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200004927-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    proto-oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleotide sequence of a cognate transgene of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16-MAY-2000
                                                                                                                   Match:
                                                                                                                                                                 8
                                  94
            18
PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                        ArgAlaAlaProLeuLeuAlaArgAla----
                                 CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCGGAGCCGCAGTGAGCACCATG
                                                                                                                                                                                                  4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                                                                                                                                                                                                                                                                                                                                             comprising
                                                                                                                                                                                                                                                                                                                                                                                                   Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             England
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                  BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0093965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US15594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  malignanacy; allogenic
                                                                                                                                                                                                                                                                                                                                                                                                  66-68; 77pp; English
                                                                                                     8.15e-98
2423.00
41.14%
40.75%
64.80%
21
                                                                                                                                                                                                 922 A; 1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTG; tumourigenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                 comprising allogenic donor cells transfected with g a proto-oncogene cognate, useful as cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3936
                                                                                                                                                                                                 ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SCI.
                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                 1346 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cellular immunogén;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cell;
                                                                                                                                                                                                 880
                                                        ···-AlaSerLeuSerLeuGly
                                                                                                                                                                                                 ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vaccine; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      c-neu.
                                                                                                                                                                                                 0 other;
                                                                                                                5
21
736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immunisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    88
                                 153
밁
                   õ
                                            밁
                                                              Ş
                                                                                         밁
                                                                                                              Š
                                                                                                                                        В
                                                                                                                                                           Ş
                                                                                                                                                                                     밁
                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                              γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                          1105
                                            1165
                                                                                                                                         1045
1225 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG
                                                                                                                                                                                                                                                                                                                                                                           745
                                                                                                                                                              318
                                                                                                                                                                                      985
                                                                                                                                                                                                                                     925
                                                                                                                                                                                                                                                           278
                                                                                                                                                                                                                                                                                  865
                                                                                                                                                                                                                                                                                                                               805
                                                                                                                                                                                                                                                                                                                                                     238
                                                                                                                                                                                                                                                                                                                                                                                                  218
                                                                                                                                                                                                                                                                                                                                                                                                                         685
                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 178 ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           325
                                                                                                                                                                                                                                                                                                        258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38
                                                                                         AACCAAGAGGTGACAGCAGGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT
                                                                                                                                                                                                PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla
                                                                                                                                                                                                                                              AsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThr
                                                                                                                                                                                                                                                                                             GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe
                                                                                                                                                                                                                                                                                                                                            ValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysH1sGlu
                                                                                                                                                                                                                                                                                                                                                                          LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlyAlaAlaSerThrGlnValCySThrGlyThrAspMetLySLeuArgLeuProAlaSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTGGCGGCCTTGTGCCGCTGG----
                                                                                                                                        CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCCACCCCTGTTCTCCGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCTGCAGCTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCAGGAGGCCTGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGGTGCAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnVaiValGlnGly
                                            GCCCGAGTGTGCTATGGTCTGGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTXCCAGT
                                                                                                                                                                                                                                     AACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAACACAGACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ·-GGGCTCCTCCTCGCCCTCTTGCCCCCC
1284
                                             1224
                                                                                          1164
                                                                                                                                         1104
                                                                                                                                                                                      1044
                                                                                                                                                                                                            317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57
                                                                                                                                                                329
                                                                                                                                                                                                                                     984
                                                                                                                                                                                                                                                          297
                                                                                                                                                                                                                                                                                  924
                                                                                                                                                                                                                                                                                                                               864
                                                                                                                                                                                                                                                                                                                                                                             804
                                                                                                                                                                                                                                                                                                                                                                                                  237
                                                                                                                                                                                                                                                                                                                                                                                                                         744
                                                                                                                                                                                                                                                                                                                                                                                                                                               217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   204
                       329
                                                                   329
                                                                                                                 329
                                                                                                                                                                                                                                                                                                        277
                                                                                                                                                                                                                                                                                                                                                     257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26,
```

Ş

밁

밁

011	391 GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal 4:	- Qy	÷	2303 ANACIANAANAANAAIACIIAANICIIAACIIIIAACKAAICIIAACKAAICIIAA
3444		ф	•	のようなできない。これでは、これでは、これでは、これでは、これでは、これでは、これでは、これでは、
390	/AlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeu	Qy	•	
3384	3325 CTGACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCCAGGTCTCCACTGGCACCCTCC	Db	4	2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGAC 2304
370		Qy		רייירייין איירייטאראטריד אריטאראטריד מריז מריז מריז מריז מריז אריטאראטריד אריז המאומיר די מריז מריז אריטאראטרי
3324	GCTGGGGGCATGGTCCACCACGAGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGAC	Db da		
350		0 5	4	2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG 2184
3064	. 1998-1994-1994-1994-1994-1994-1994-1994-	P 5	.•	329 329
3204	CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTTGGTG	Db	• • • •	2065 GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCCCCCTCTGACGTCCATCGTCTCTGCGGTG -2124
329	329 3:	Qy		
3144	3085 ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	Db		GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGAACCTGGAT
329	329 3:	Qy		
3084	3025 TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC 3	Db	4	CGCTGCCCAGCGGTGTGAAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGAT
329 .	329 3:	Оу	ı	
3024	2965 GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 3	DЬ	•	ついていまうのでは、これでは、これでは、これでは、これでは、これでは、これでは、これでは、これ
329 .	329 3:	Qy		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2964	2905 GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG 2	Db		CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA
329.: .	329 3:	Фу		
2904	2845 TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT 2	Db		GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTGAATGCCAGG
329	329 3:	Qy		
2844	2785 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGGCCGG	Db		CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG
329	329 3	Qy		329 329
2784	GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGGTGGACATTGACGAGACAGAGTACCAT	дg		1645 CGGCCAGAGGACGAGTGTGTGGGCCAGGGGCCTGGCCTACCAGCTGTGCGCCCGAGGG 1704
329 .	329 3;	Qy	•	329 329
2724	GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT	b	4	ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC
329	329 3;	Qy		
2664	2605 TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 20	Db	4	AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC
329	329 3:	Qy	<b>.</b>	329
2604	2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC 20	рь	•	
329	329 3:	Qy		C 1847-C 1 CARRON 1 CT 1 C CARRANCE TREAMS 1 AV 1 C CRRRANT I C 18CH CHAT
2544	2485 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2	Дb	`	つぜら プラウ そうつぞう からつら ボーザー・ファイン とうしょうしょ くっぱっしょう とうじゅう とうじゅう とうじゅう とうじゅう とうじゅう とうじゅう とうじゅう とうじゅう とうじゅう とうしゅう とうしゅう しょくくん しんしゅう しんしゅう しゅうしゅう しゅう
329	329 3;	Qy	£	O TRAIL TRANSMERT EL TRANSMERT ENCHANDET TWEET EL TRANSMERT ENCHENDANCHE
2484	2425 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 24	Db	•	<b>では、これでは、「は、これでは、「は、これでは、「は、これでは、「は、これでは、「は、これでは、「は、これでは、「は、これでは、「は、これでは、「は、」、「は、これでは、「は、」、「は、これでは、「は、」、「は、これでは、「は、」、「は、」、「は、」、「は、」、「は、」、「は、」、「は、」、「は</b>
329	329 3:	Qy	4.	1403 WAWANCIIIIWAIWUWAKUCKAWUCIICKAAKAKIIWCCUCKUCKAWAWCAWIICKAA 1344
2424	2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 24	Db	•	く くししゅうしょ しょうじしょ しんじゅうしゅうしゅう さん としゅうしょうしょうじゅん ひをもま ひをもまし マイン・マイン・マイン・マイン・マイン・マイン・マイン・マイン・マイン・マイン・
329	329 3:	Qy		320 320

Ş

밁

밁

ð

Ş

В Ş В Ş 밁 Q 밁 Š 밁 Ş

밁

```
RESULT 8
AAD19731
õ
                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3445
                                                                                                                                                                               CDS
                                                                                                                                                                                                                           Therapeutic compound; major histocompatibility complex; vaccine; antigenic peptide; MHC; immunoregulatory; immune response; HER-2; adoptive immunotherapy; anti-cancer; breast cancer antigen; APC; antigen presenting cell; human; tyrosine kinase-type receptor; ss.
                                                                                                                                                                                                                                                                                                                                                                      3919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3505
                                                                       16-MAR-2000;
                                                                                                                                                                                                          Homo
                                                                                                                                                                                                                                                                                                                                                                                                          3865
                                                                                                                                                                                                                                                                                                                                                                                                                                               3805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3565
      WPI; 2001-616284/71.
P-PSDB; AAE12130.
                                  Nicolette
                                                    (GENZ ) GENZYME CORP
                                                                                          16-MAR-2001; 2001WO-US40328
                                                                                                                                                                                                                                                                         Human tyrosine
                                                                                                                                                                                                                                                                                           18-DEC-2001 (first entry)
                                                                                                                                                                                                                                                                                                              AAD19731;
                                                                                                             20-SEP-2001
                                                                                                                                WO200168677-A2
                                                                                                                                                                                                                                                                                                                                 AAD19731 standard; cDNA; 4530
                                                                                                                                                                                                                                                                                                                                                                                        551
                                                                                                                                                                                                                                                                                                                                                                                                                            531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        411
                                                                                                                                                                                                                                                                                                                                                                               AlaArgSerProSerPro 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                   GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu
                                                                                                                                                                                                                                                                                                                                                                      ACCAGAAGGCCAAGTCCG 3936
                                                                                                                                                                                                                                                                                                                                                                                                         GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA-----GTGTGA 3918
                                                                                                                                                                                                                                                                                                                                                                                                                                               AACCTCTATTACTGGGACCAGGACCCACCAGGAGCGGGGGGGCTCCACCCAGCACCTTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATGTGAACCAGCCAGATGTTCGGCCCCCAGCCCCCTTCGCCCCGAGAGGGCCCTCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAA
                                                                        2000US-0527487
                                                                                                                                                                                                                                                                         kinase-type receptor, HER-2 cDNA.
                                                                                                                                                                              Location/Qualifiers 151..3198
                                                                                                                                                  /product= "Human tyrosine kinase-type receptor,
HER-2"
                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                                                                                                                                                                                                                                                                                                                                                            550
                                                                                                                                                                                                                                                                                                                                                                                                                                              3864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3744
```

Novel synthetic therapeutic compound for inducing immune response and for use in adoptive immunotherapy, has enhanced binding to major histocompatibility molecules and enhanced immunoregulatory properties

Disclosure; Page 57-63; 69pp; English

for inducing an immune response in a subject and for use in adoptive immunotherapy. They are useful as components of anti-cancer vaccines and to expand immune effector cells that are specific for cancers characterised by expression of the breast cancer antigen, HER-2. Polynucleotides that encode peptides of the invention are useful as phybridisation probes and as primers for the detection of genes of gen transcripts that are expressed in antigen presenting cells (APCs), to confirm transduction of polynucleotides into host cells. The present sequence is human tyrosine kinase-type receptor, HER-2 CDNA. The invention relates to synthetic therapeutic compounds (antigenic peptides) with enhanced binding to major histocompatibility complex (MHC) molecules and enhanced immunoregulatory properties relative to their natural counterparts. Compounds of the invention are useful genes of gene ls (APCs), to

Sequence 4530 BP; 922 A; 1382 C; 1346 G; 880 T; 0 other;

Align Pred. Score Percer Best 1 Query DB:	Alignment Scores:  Pred. No.:  8.15e-98  Core:  2423.00  Matches:  524  Percent Similarity:  41.148  Best Local Similarity:  40.758  Conservative:  64.808  DB:  Conservative:  520  Conservative:  530  Conservative:  54  Conservative:  57  Conservative:  57  Conservative:  64  Co	
-60-sn	-821-883-2 (1-690) x AAD19731 (1-4530)	
Qy	2 ArgAlaAlaProLeuLeuLeuAlaArgAlaAlaSerLeuSerLeuGly 17	
망	TCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCGGA	
γo	18 PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg 37	
Db	154 GAGCTGGCGGCCTTGTGCCGCTGGGGGCTCCTCCTCGCCCCTCTTGCCCCCC 204	
Qy	38 GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer 57	
Db	205 GGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCCTCCCTGCCAGT 264	
Qy	58 ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly 77	
DЪ	265 CCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGGTGCAGGGA 324	
Qy	78 AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln 97	
. Db	325 AACCTGGAACTCACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCT	
Qy	98 GluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArg 117	
Db	385 GAGGTGCAGGGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCCACTGCAGAGG 444	
Qy	118 LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp 137	
Db	445 CTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGAC 504	
Qy	138 AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg 157	
DЬ	505 AATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCCAGGAGGCCTGCGG 564	
Qy	158 GluLeuGlnLeuArgSerLeuThrGluIleLeuLySGlyGlyValLeuIleGlnArgAsn 177	
DЪ	565 GAGCTGCAGCTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAAC 624	
Qy	178 ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln 197	
Db	625 CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAG 684	

		329 329
320 320		1705 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1764
2785 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 2844	Db	
329 329	Qy	
2725 GTCAAAATTACAGACTTCGGGCTGGCTGGCTGGTGGACATTGACGAGACAGAGTACCAT 2784	Дb	CGGCCAGAGGACGAGTGTGTGGGCGACGACCGACCAGCCAG
329 329	Qy	
2665 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 2724	. ეხ	1585 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1644
	Qy	329 329
TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT	. Db	1525 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC 1584
	. Oy	329 329
CAGCITATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGCGCCTGGGC		1465 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGGTGGG
	D. Oy	329 329
TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA	Db	1405 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT 1464
	Qy	329 329
2425 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGGC 2484	Db	1345 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1404
	Qy	329 329
2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2424	Db	GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG
329	Qy	329 329
GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC	Db	GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTTCTGCCG
329 329	. Оу	
2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2304	Db	1165 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT 1224
	Qy	329 329
CASCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	ב ב	1105 AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT 1164
	Oy	329 329
GTTGGCATTCTGCTGGTCGTGGTCTTTGGGGTCTTTTGGGATCCTCATCAAGCGACGG	Db	1045 TGTCCCTACAACTACCTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCCCTGCAC 1104
329 329	, Oy	18 CysProTyrAsnTyrLeuSerThrAspValGlySer
2065 GACAAGGGCTGCCCGGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG 2124	Db	TTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGACTGCC
329 329	ОУ	8 DhaGlusarWattraaanaroGlusluarsTurrThrobaGluslasarCusValThrala 3
2005 GAGGAGGCGCATGCCAGCCTTGCCCCCATCAACTGCACCCCACTCCTGTGTGGACCTGGAT 2064	Db	2/0 ASIRILSSEIGLYSTERS ACCOUNTS OF THE STATE OF THE STATE AS THE STATE
329 329	. Oy	79
1945 CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGAT 2004	Dp	zoo Gillysalahabdyvystingliyerolysiisserapoystedhadvystedhisene 2// 
329 329	· Qy	AS Clares as a selection of the selectio
1885 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	מם	23 VALLYSALAGLYKLYKLARTGLYSLYSKLYFICHUFFOTINASPLYSKJYSKLISKIU 25/ 
329 329	Qy	20 13 10 13 1 10 1 10 1 10 11 13 13 13 13 13 13 13 13 13 13 13 13
CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1884	Db	218 CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr 237
329 329 .1	. Qy	CIBECICACACIBAIAGACACCAACCGCICICGGGCCTGCCCCCTGTTCTCCGAIG /
1765 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG 1824	. · Db	98 LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet 21

В Ş 밁 Š В Ş В δ 밁 á 밁 δ В οy

Ş В Q В Ş 밁 Ş 밁 Ş 밁 Ş 밁 Q 밁 Ş 밁 Ş ₽ ş В õ 밁

```
3865
                                                                                3805
                                                                                                                                   3745
                                                                                                                                                                                                                                         3625
                                                                                                                                                                                     3685
                                                                                                                                                                                                                                                                                            3565
                                                                                                                                                                                                                                                                                                                                                                                                 3445
                                                                                                                                                                                                                                                                                                                                                                                                                                                     3385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3145
                                                                                                                                                                                                                                                                                                                                              3505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2845
                                                      531
                                                                                                       511
                                                                                                                                                           491
                                                                                                                                                                                                               471
                                                                                                                                                                                                                                                                  451
                                                                                                                                                                                                                                                                                                                    431
                                                                                                                                                                                                                                                                                                                                                                       411
                                                                                                                                                                                                                                                                                                                                                                                                                           391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                   GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                           AlaArgSerProSerPro 556
                                                                                                                                                                                                                                                                                                       TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro
                                                                                                                                                                                                                                                                                                                                                            ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu
                                                                                                                                                                                                                                                                                                                                                                                                            GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGGGGCTGCCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AlaGlyGlyMetValH1sH1sArgH1sArgSerSerSerThrArgSerGlyGlyAsp
                        GGGACACCTACGGCAGAGAACCCCAGAGTACCTGGGTCTGGACGTGCCA-----GTGTGA 3918
                                                                                                                                                                                                                                                                                         TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCCGAGAGGGCCCCTCTGCCT
                                                                                                                                                                                                                                                                                                                                             CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                CAAAGCCTCCCCACACATGACCCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTG 3204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 3024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCACCCACCAGAGTGATGTGGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gly
                                                                                                                                                                                                                                                                                                                   450
                                                                                                                                                                                                                                                                                                                                                                      430
                                                                                                                                                                                                                                                                                                                                                                                                                        410
                                                                             3864
                                                                                                                                3804
                                                                                                                                                         510
                                                                                                                                                                                   3744
                                                                                                                                                                                                            490
                                                                                                                                                                                                                                     3684
                                                                                                                                                                                                                                                               470
                                                                                                                                                                                                                                                                                         3624
                                                                                                                                                                                                                                                                                                                                            3564
                                                                                                                                                                                                                                                                                                                                                                                              3504
                                                                                                                                                                                                                                                                                                                                                                                                                                                  3444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
```

S

밁

S

В õ 밁 Ş

밁

8 Ş õ

₽ õ В S В Ş g Ş 용 Š 밁

밁

밁 Ş 밁 Ş 밁 ő ₽ Ş 밁 Š 밁 õ 밁 õ

3919

ACCAGAAGGCCAAGTCCG

3936

Š

```
밁
                                                                                         맑
                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
ABN85585
                                                         Ş
                                                                                                                                                                                  Query Match:
DB:
                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                       US-09-821-883-2 (1-690) x ABN85585 (1-4530)
                                                                                                                                                                                                                                             Score:
                                                                                                                                                                                                                                                           Alignment
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-DEC-2000;
04-DEC-2000;
11-JUN-2001;
                                                                                                                                                                                                                                                                                                                              receptor tyrosine kinase targeted agent for treating tumour by amplifying mRNA from tumour and non-malignant tissues using a primer pair that hybridises to epidermal growth factor receptor (EGFR) and/or HER2-neu gene (I), quantitating and obtaining differential expression levels of amplified mRNA and comparing the differential expression levels and threshold levels for expression of (I). The method is useful for assessment of clinical treatment of a patient and as a diagnostic or prognostic tool for a range of cancers including breast, head and neck, lung, oesophageal and colorectal cancer. The present sequence is that of the human HER2-neu DNA sequence used in methods of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Determining chemotherapeutic regimen of receptor tyrosine kinase targeted agent for treating tumor by examining EGFR and/or HER2-neu mRNA amount in tumor cells, comparing it to predetermined threshold expression level
                                                                                                                                                                                                                                                                                                       Sequence 4530 BP; 922 A; 1382 C; 1346 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to determining the chemotherapeutic regimen of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 124-125; 125pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                expression level
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-537460/57.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; EGFR; HER2-neu; chemotherapeutic regimen; tumour; cancer;
receptor tyrosine kinase; epidermal growth factor receptor; ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABN85585 standard; DNA; 4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (RESP-) RESPONSE GENETICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-NOV-2001; 2001WO-US43035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200244413-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HOMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABN85585
                                154
                                                            18
                                                                                         9.4
{\tt GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer}
                                                   PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                          CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCGGAGCCGCAGTGAGCACCATG
                                                                                                                      ArgAlaAlaProLeuLeuLeuAlaArgAla---
                                                                                                                                                                                                                                                                           Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           expression;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HER2-neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; 2000US-250122P.
; 2000US-250469P.
; 2001US-0877177.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ds.
                                                                                                                                                                              8.15e-98
2423.00
41.14%
40.75%
64.80%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NO 11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                               -GGGCTCCTCCTCGCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                                                                       880 T; 0 other;
                                                                                                                      AlaSerLeuSerLeuGly
   57
                               204
                                                                                          153
                                                                                                                        17
                                                            37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ....
```

2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2424	l . pb		5
329 329	. Qy	79	Ş
2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2364	, 	1225 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 1284	밁
. 329 329	Qy		δ
2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2304	Db	GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT	당 .
329 329	o <sub>y</sub>	329 329	Q Q
CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	Db	AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT	DЪ
329 329	Qy		ς Q
2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG 2184	Db		문
329 329	Qy	CysproTyrAsnTyrLeuSerThrAspValGlySer	δ
2065 GACAAGGGCTGCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG 2124	Db		문 5
329 329	QУ	Dhod   ISerMot DroAsa Drod   IIG   vārd Pur Phrobod   vā   acerd vova   Thra   a	Ş
2005 GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCCACTCCTGTGTGGACCTGGAT 2064	da	AACCACAGAGTGGCATCTGTGAGGTGGCACTGGCCCTGGTCACCTAACAACACACAC	문 5
329 329	Оу	AgnH aSorG vT oCvsG \\Io\\H aCvsDroA aLo\\Va \Thracor\	9
1945 CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGAT 2004	Db	865 CARTROTOCTOCOCCOTOCARCOCOCARCOCARCOCARCO	g 5
329 329	Qy		Ş
1885 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	dd	805 GTUTGTGCCGGTGGCTGCCAAAGGGCCACTGCCCATTGACTCCTATTGAC 864	문 5
329 329	Qy	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	2 1
1825 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1884	Db		Z 5
329 329	Qy	CvalvaClvSprbraCvaTrnClvCluSprSprCluBanCvaClnSprTpnThrbraThr	Ş
1765 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG 1824	Db		문 5
329 329	Qy	[enA]a[enThr[enI]eAgoThrAgoArgSerArgA]aCvgHigDroCvgSerDroMet	Q :
1705 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1764	Db	1/0 FIVO-INGGUYSIY GINGSPINLIEGEGIL PHYSASPILGEFEGILSHYSASHASHGIL 13/ 	B 2
329 329	Qy	Drond late our real sales whit I do out rate out to be out of the sales along to	ę į
1645 CGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG 1704	Db	TO GRADUE GRAD	B 2
329 329	Qy	Clure 100 1 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 1
1585 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1644	Db	10   10   10   10   10   10   10   10	g 5
329 329	Qy		2 5
1525 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC 1584	Db		? S
329 329	Qy	מלווס וופער ( לווס וב ( לידע שתפתפת מלוו ( במלווס ות לפתר לשתפתפת מלווס ות לפתר לשתפת המלווס ות לפתר לשתפת לתפתפת המלווס ות לפתר לשתפת המלווס ות לפתר לפתר לפתר לפתר לפתר לפתר לפתר לפת	2 1
1465 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	Db	385 GAGGTGCAGGGCTACGTCCATCACCTCACAAGCTGAAGCAAGGTACACGACTGCACAAGG 444	B 5
329 329	Qy	GlinValGlnGl vTvrVallenilleAlaBisaGlnValAraGlnValtroleniGlnAra	Ş
1405 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATTCTGCACAAT 1464	ДЬ		문 4
329 329	. Оу	Agnieugiuieurieurieuromhragnalagerrieugeromhragnalagerrieuger	<b>?</b> ;
1345 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1404	Db		<b>3</b> 5
329 329	Qy	050001::@bsu46570::Wasa465470::Wasa46570::@c::601::01::01::01::01::01::01::01::01::0	2
1285 GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG			D D

```
ş
                  Š
                                                                             밁
                                                                                                õ
                                                                                                                    밁
                                                                                                                                                           В
   밁
                                       В
                                                                                                                                     á
                                                                                                                                                                            õ
                                                                                                                                                                                                В
                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
   3445
                                                                                                                                                                                                3145
                                       3385
                                                                              3325
                                                                                                                     3265
                                                                                                                                                           3205
                                                                                                                                                                                                                                       3085
                                                                                                                                                                                                                                                                              3025
                                                                                                                                                                                                                                                                                                                    2965
                                                                                                                                                                                                                                                                                                                                                           2905
                                                                                                                                                                                                                                                                                                                                                                                                 2845
                                                                                                                                                                                                                                                                                                                                                                                                                                     2785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2425
                                                           371
                                                                                                                                       331
                                                                                                  351
                                                                                                                                                                              330
                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                             329
                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329
GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeu
                                                                           GAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCCAAGGGGCCTG
                                                                                                                    GCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGGAC
                                                                                                                             AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAsp
                                                                                                                                                         GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC
                                                                                                                                                                                                CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTG
                                                                                                                                                                                                                                      TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGGAGTTGGTGTCTGAATTCTCCCGC
                                                                                                                                                                                                                                                                                                                 GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT
                                                                                                                                                                                                                                                                                                                                                         GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                               TTCACCCACCAGAGTGATGTGGAGTTATGGTGTGACTGTGTGGGGAGCTGATGACTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAAACCGCGGGACGCCTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC
                                                                                                                                                                             -Gly
                                                                                                                                                                                                                                                                                                                                                        2964
                    410
                                                                                                                                                                                                3204
                                                                                                                                                                                                                                                                            3084
                                                                                                                                                                                                                                                                                                                   3024
                                                                                                                                                                                                                                                                                                                                                                                               2904
                                                                                                                                                                                                                                                                                                                                                                                                                                    2844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2544
 3504
                                      3444
                                                         390
                                                                            3384
                                                                                                                                                         3264
                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2484
                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
```

```
RESULT 10
ABK83
XX ABK83
XX ABK83
XX ABK83
XX ABK83
XX ABK83
XX Human
XX Human
XX Yiral
KW Cardil
KW Grohn
KW Grohn
XX G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               adult respiratory distress syndrome; inflammatory bowel d Crohn's disease; ulcerative colitis; periodontal disease; granulocyte activation; chronic inflammation; allergy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; ss; granulocytic cell; DNA chip; bacterial infection; viral infection, parasitic infection, protozoal infection, fungal infection; sterile inflammatory disease; psorlasis; rheumatoid arthritis; glomerulonephritis; asthma; thrombosis; cardiac reperfusion injury; renal reperfusion injury; ARDS; cardiac reperfusion injury; renal reperfusion injury; ARDS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3919
                                                                                                                                                                                                                                                                                                                   03-OCT-2000; 2000US-237189P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3505
                                                                                                                                                                                                                                                                                                                                                                   03-OCT-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                      11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human cDNA differentially expressed in granulocytic cells #489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABK83918
                                                                                                                                                                                                                  Beazer-Barclay Y,
                                                                                                                                                                                                                                                                     (GENE-) GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200228999-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AlaArgSerProSerPro 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGTGCCGTGGAGAACCCCGAGTACTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGCCCGACCTGCTGGTGCCACTCTGGAAAGGGCCCAAGACTCTCTCCCCCAGGGAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACCTCTATTACTGGGACCAGGACCCACCAGAGCGGGGGGCTCCACCCAGCACCTTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCCAGGGAGGAGCTGCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerProGlyLySASn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
                                                                                                                                                                                                                                                                     LOGIC
                                                                                                                                                                                                                                                                                                                                                                   2001WO-US30821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                       Weissman
                                                                                                                                                                                                                                                                        INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA; 4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3936
                                                                                                                                                                                                                       , MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BP
                                                                                                                                                                                                                     Yamaga
                                                                                                                                                                                                                     'n
                                                                                                                                                                                                                     Vockley
                                                                                                                                                                                                                     Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ÷
```

Detecting granulocyte activation by detecting differential expression of genes associated with granulocyte activation, which serves as diagnostic markers that is useful for monitoring disease states and

Claim

<u>,</u> SEQ

Ħ

ĕ 489;

114pp;

English

toxicity

564

624

684

217

```
Best Local Si
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                          Š
                                                                                                                              밁
                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cc chronic) in a tissue, an allergic response in a subject, exposure of a cubject to a pathogen or sterile inflammatory disease using the correction expression profile; (3) detecting (M4) an inflammation (especially chronic) in a tissue, an allergic response in a subject, exposure of a cubject to a pathogen or sterile inflammatory disease, by detecting the level of expression in a sample of the tissue of gene(s) from Gs, where ct level of expression of the gene is indicative of inflammation; cl (4) treating (M5) an inflammation (especially chronic) or in a tissue, can allergic response in a subject, exposure of a subject to a pathogen or sterile inflammatory disease, by contacting a tissue having cl inflammation with an agent that modulates the expression of gene(s) for mGS in the tissue. M1 is useful for detecting GCR, M2 is useful for condulating GA; M3 is useful for screening an agent capable of modulating GCR preferably in an inflammation in a tissue, M4 is useful for cesponse in a subject, exposure of a subject to a pathogen or sterile conflammatory disease (e.g. psoriasis, rheumatoid arthritis, conflammatory bowel disease, Crohn's disease, cardiac reperfusion injury, renal reperfusion injury, ards, adult respiratory distress syndrome, conflammatory bowel disease, Crohn's disease, ulcerative colitis, conflammatory bowel disease, Crohn's disease, ulcerative colitis, conflammation one of the above conditions. The present sequence data for this patent did not form part confliction in the printed specification, but was obtained in electronic conflictions.
   밁
                                                              8
                                                                                                                                                          Ş
                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                       US-09-821-883-2 (1-690) x ABK83918
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the expression level to an expression level in an uncomposition level to an expression of Gs is indicative of GCA.

GC, where differential expression of Gs is indicative of GCA.

Also included are modulating (M2) GA by contacting GC with an agent that alters the expression of at least one gene in Gs; (2) screening (M3) for an agent capable of modulating GCA or an inflammation (especially for an agent capable of modulating GCA or an inflammation exposure of a formal in a tissue, an allergic response in a subject, exposure of a formal in a tissue, an allergic response in a subject, exposure of a formal inflammatory disease using the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to detecting (M1) granulocyte (GC) acti-
(GCA), by detecting the level of expression of gene(s) (GS)
DNA chip analysis as given in the specification, and comparing
the expression level to an expression level in an unactivated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of the printed specification, but format directly from WIPO at
   385
                                                                 325
                                                                                                                               265
                                                                                                                                                                                              205
                                                                                                                                                                                                                                                            154
                                                                                              78
                                                                                                                                                                                                                            38
                                                                                                                                                                                                                                                                                          18
                                                                                                                                                                                                                                                                                                                            94
                                                                                                                                                              88
ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly
                                                                                                                                                                                          GAGCTGGCGGCCTTGTGCCGCTGG------GGGCTCCTCCTCGCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                                                                                         CGCGCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCCGGAGCCAGTGAGCACCATG
                                                                                                                                                                                                                                                                                                                                                         ArgAlaAlaProLeuLeuAlaArgAla----
                                                                               AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln
                                                                                                                                                                                                                                                                                         PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                              4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       922
                                                                                                                                                                                                                                                                                                                                                                                                                       8.15e-98
2423.00
41.14%
40.75%
64.80%
24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; 1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      detecting (M1) granulocyte (GC) activation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     G
                                                                                                                                                                                                                                                                                                                                                                                       (1-4530)
                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1346 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       880
                                                                                                                                                                                                                                                                                                                                                       ----AlaSerLeuSerLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                      4530
524
5
736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Gs) identified
                                                                                                                                                                                                                          57
                                                                                                                                                                                                                                                          204
444
                                                              384
                                                                                              97
                                                                                                                                                          77
                                                                                                                                                                                          264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         γģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                밁
                                           Š
                                                                             밁
                                                                                                          Š
                                                                                                                                           뫄
                                                                                                                                                                        Š
                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                1465
                                                                                                                                                                                                                                                                                                                                                                                                         1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1045
                                                                                                                                                                                                                                                                             1225
                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysH1sGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ASDG1yASpProLeuASDASDThrThrProValThrG1yAlaSerProG1yG1yLeuArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp
                AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT 1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTAAGGGCTCCCGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGCCTGACGCGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGAC
                                                                               CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT 1464
                                                                                                                                             GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1404
                                                                                                                                                                                                                                                                         GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 128
                                                                                                                                                                                                                                                                                                                                        GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT 1224
```

1104

1044

317 984 297

277

864 257

924

804 237 744

329

329

Ą	ру 329	329
မွ	Db 1525 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCACC	1584
ş	у 329	329
မွ	Db 1585 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC	1644
ž	λy 329 ·····	329
B	Db 1645 CGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG	1704
ž	)y 329	329
ğ	Db 1705 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG	1764
ž	ру 329	329
ĕ	Db 1765 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG	1824
¥	у 329	329
퓻	Db 1825 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA	1884
¥	ру 329	329
용	Db 1885 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	1944
¥	ру 329	 329
õ	Db 1945 CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCCATCTGGAAGTTTCCAGAT	2004
¥	y 329	329
ğ	Db 2005 GAGGAGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCCACTCCTGTGTGGACCTGGAT	2064
¥	у 329	329
용	Db 2065 GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG	2124
¥	ру 329	329
용	Db 2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG	2184
¥	у 329	329
용	Db 2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	2244
¥	у 329	329
ŏ	Db 2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG	2304
ž	у 329	329
용	Db 2305 GAGCTGAGGAAGGTGAAGGTGCTTTGGATCTGGCGCTTTTTGGCACAGTCTACAAGGGCATC	2364
¥	y 329	329
岁	Db 2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC	2424
¥	y 329	329
ğ	D 2425 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC	2484
¥	y 329	329
ŏ	D 2485 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA	2544
¥	у 329	329
ŏ	b 2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC	2604
¥	λy 329	329

490	GlyValValLySAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr	471	. 04
470 3684	AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsn 	, 451 ) 3625	Qy Db
450 3624	TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro	, 431 ) 3565	Фр
430 3564	ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 	, 411 3505	Qy Db
410 3504	GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal	391	Qy Db
390	GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeu 	, 371 ) 3385	Qy dd
370	LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer	351 3325	Qy Db
350	AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAsp 	3265	. Qy
3264	G19           GATGCTGAGGAGTATCTGGTACCCCAGCAGGCTTCTTCTGTCCAGACCCTGCCCCGGGC	3205	da dy
3204	CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTG	314	, B
329		, 329	у
3144	ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGGCCCAGCCAG	3085	Db
329			νδ
3084	TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC	3025	Q
3024	GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT	296	P B
329		, 329	νο
2964	GGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG	N	Db .
2904. 329	TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGAGGAGCTGATGACTTTT	) 2845 , 329	Oy Db
329		329	- 40
2844	GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG	2785	Db
329		329	οy
2784	GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT	2725	Db
329	;	, 329	ν
2724	GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT	2665	מם
329	A.J.	329	γQ
2664	TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT	2605	da da

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
         The invention relates to treating a tumour in a mammal, where the tumour is characterised by the overexpression of an epidermal growth factor receptor (ErbB) and does not respond or responds poorly, to treatment with an anti-ErbB antibody, comprising administering to the mammal an anti-ErbB antibody-maytansinoid conjugate. The method is useful for treating cancer or tumours of the breast, overy, stomach, endometrium, salivary gland, lung, kidney, colon, colorectum, thyroid, pancreas, prostate and bladder, preferably breast cancer. The breast cancer is a metastatic breast cancer or an aggressive form of metastatic breast
                                                                                                                                                                                                                                                                                                                                                                                                                       anti-ErbB antibody-maytansinoid conjugate; cancer; tumour; brea stomach; endometrium; salivary gland; lung; kldney; colon; colo thyroid; pancreas; prostate; bladder; ErbB2; neuronal disorder; glial disorder; astrocytal disorder; hypothalamic disorder; glandular disorder; macrophagal disorder; epithelial disorder; stromal disorder; blastocoelic disorder; inflammatory disorder; stromal disorder; blastocoelic disorder; inflammatory disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3805
                                                                                                                                          Treating tumour characterised by factor receptor, ErbB or cancer anti-ErbB antibody-maytansinoid
                                                                                                                                                                                                                                 (ERIC/)
(SCHW/)
(SLIW/)
                                                                                                                                                                                                                                                                             16-MAR-2000;
05-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                          US2002001587
                                                                                                                                                                                                                                                                                                                                                                               Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human HER2 (ErbB2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABK14057;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABK14057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3685
                                                                                                                       Example 3; Fig
                                                                                                                                                                                                                                                                                                                                    03-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                               angiogenic disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-APR-2002
                                                                                                                                                                                                                                                                                                               16-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                            Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AlaArgSerProSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCGAGTACTTGACA
                                                                                                                                                                                        2002-163686/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA-----GTGTGA 3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HER2;
                                                                                                                                                                                                                                  SCHWALL R.
SLIWKOWSKI M.
                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard;
 breast cancer or an aggressive for 
the overexpresses ErbB2. The method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ErbB;
                                                                                                                                                                                                                                                                             2000US-189844P.
2000US-238327P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first
                                                                                                                                                                                                             Schwall R,
                                                                                                                                                                                                                                                                                                               2001US-0811123
                                                                                                                       7; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       epidermal growth factor receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             transgene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entry)
                                                                                                                                                                                                                                                                                                                                                                                                                immunological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3936
                                                                                                                                                                                                             Sliwkowski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             plasmid construct DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                                                                                                                                γď
                                                                                                                                          y overexpression of epidermal growth in mammal, comprises administering conjugate to the mammal -
                                                                                                                                                                                                                                                                                                                                                                                                                disorder
                                                                                                                                                                                                             3
  also useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   colorectum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               breast;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment :
Pred. No.:
                   Š
                                           밁
                                                                Š
                                                                                       밁
                                                                                                         Š
                                                                                                                                 밁
                                                                                                                                                     80
                                                                                                                                                                             밁
                                                                                                                                                                                               Š
                                                                                                                                                                                                                       ġ
                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-821-883-2 (1-690)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score:
                                                                                                                                                                             2217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1746
  2457
                                            2397
                                                                                                                                                                                                                        2157
                                                                                                                                                                                                                                                                                                               2037
                                                                                                                                                                                                                                                                                                                                                                                                     1917
                                                                                        2337
                                                                                                                                 2277
                                                                                                                                                                                                                                                                   2097
                                                                                                                                                                                                                                                                                                                                                         1977.
                                                                                                                                                                                                                                                                                                                                                                                                                                             1857.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 9274
                     262
                                                                  242
                                                                                                           222
                                                                                                                                                       202
                                                                                                                                                                                                  182
                                                                                                                                                                                                                                            162
                                                                                                                                                                                                                                                                                        142
                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                              102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42
                                                                                                                                                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N
            GlyCysThrGlyProLysH1sSerAspCysLeuAlaCysLeuH1sPheAsnH1sSerGly
                                                        ArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsnProGlnLeuCys
                                                                                                                                                                                                                                                                             ArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAspPro
                                                                                                                                                                                                                                                                                                                                                                   TyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIleVal 121
  GGCTGTGCCCGCTGCAAGGGGCCACTGCCCACTGACTGCCATGAGCAGTGTGCTGCC
                                                                                                                                                                                                                                                                   CTGAACAATACCACCCCTGTCACAGGGGGCCTCCCCAGGAGGCCTGCGGGAGCTGCAGCTT
                                                                                                                                                                                                                                                                                                                                                         TACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCACTGCAGAGGCTGCGGATTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scores:
                                                                                                                                                                                                                                                                                                               CGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGACAATGGAGACCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.76e-97
2422.00
41.128
40.438
64.788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2152 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       x ABK14057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (1-9274)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ç;
```

2276 201 2216 181 2156

2336

221

2396 241

261

2516

2456 281

161

141 2036

٠:

```
neuronal, glial, astrocytal, hypothalamic, glandular, macrophaga epithelial, stromal, blastcocoelic, inflammatory, anglogenic and immunological disorders. This sequence represents a HER2 (ErbB2) transgene plasmid construct used to direct expression of native HER2 in the mammary gland of a transgenic mouse.
                  ThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGlnGly
                                                                  LeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAlaSer
                                                                                                                                                                                                                                                                                 CGCCCCGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGAGCTGGCG------GCC
                                                                                                                                                                                                                                                                                                                   ArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPheLeu
 ACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCTGCAGGATATCCAGGAGGTGCAGGGC
                                                                                                                                                                                                             TTGTGCCGCTGG------GGGCTCCTCCTCGCCCTCTTGCCCCCGGAGCCGCGAGC
                                                                                                                                                                                                                                                                                                                                                                                                        Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7;
                                                                                                                                                                                                                                                                                                                                                                                         9274
528
9
31
738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0 other;
1976
                                 101
                                                                  1916
                                                                                                     81
                                                                                                                                                                        61
                                                                                                                                                                                                             1796
                                                                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                 1745
                                                                                                                                          1856
                                                                                                                                                                                                                                                                                                                   21
```

밁

Ş

DD 461/ TCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTGTGTGT		3537 GGTGTGAAACCTGACCTCCTACATGCCCATCTGGAAGTTTCCAGATGAGGAGGGCGCA 3596
329		
Db 4557 CAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAAATGTTGGATGATTGAC		CAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCTTCTGCGTGGCCCGCTGCCCCAGC
ОУ 329		329
Db 4497 TACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGGGAGCGGCTGCCC		329
329		GAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGGCACTGTTTGCCG
Oy 329 329  Dh 4437 AGTGAGTGTGAGTGTGAGTGTGAGTGGGGGGGGGGGGG	•	329
4		CCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCCAGGAGTGCGTGGAG
Оу 329	·	
Db 4317 GACTTCGGGCTGGCTCGGCTGGACATTGACGAGAGAGAGA		GAGTGTGTGGGGGAGGGGCTGGCCTGCCAGCTAGCTGTGCGCCCGAGGGCACTGCTGGGGT
Qy 329	•	
4		329 329
329		3117 AGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCACACGGTGCCCTGG 3176
Db 4197 CTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTA 4256		329 329
Db 4137 TATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGACGCCTGGGCTCCCAGGACCTG		3057 CTGACCCTGCAAGGGCTGGGCATCAGCTGGGCTGGGGCTCACTGAGGGAACTGGGC 3116
329		329 329
4		AGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAATGGCGCCTACTCG
Oy 329		
Db 4017 GCCAACAAGAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGCTCCCCATATGTC		CTGGAAGAGAGACACGTTACCTATACATCTCACCATGGCCCGGACACCTTGCCTTGACACACTACC
Qy 329	٠,	
Db 3957 GGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAACACATCCCCCAAA 4016		GGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAGAGCAGCTCCAAGTGTTTGAGACT
Qy 329	—	270
Db 3897 GTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATCTGGATCCCTGAT		GAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTTCTGCCGAGAGATTTTGAT
Oy 329		
Db 3837 AGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACGGAGCTGAGGAAG		TATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGAGGTAGCTACTGCAGTGCGATATATCTAG
Qy 329		
Db 3777 CGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAGCCGCTGACACCT	<del>:</del>	ACASCAGAGGATGGAACACAGCGGTGTGAGAGAGGAGGAGGAGGGTGTGTGT
Qy 329		
Db 3717 CTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGGCAGCAGAAGATC		2637 TACCTTTCTACGACGTGGGATCCTTCCTACCACCTTCCTT
Qy 329	:	TWT O IN SOUTH THE TOTAL TOTAL STATE OF THE TOTAL S
Db 3657 CCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGTGGTTGGCATTCTG	•	
Qy 329		
·ω		IleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSerMet
Oy 329	_	

õ

á

á 밁 Ş

```
RESULT 12
AAA14812
ID AAA14
XX
AC AAA14
AC AAA14
XX
DT 08-AU
XX
DE CDNA
XX
                                                                                               5562
                                                                                                                                  5511
                                                                                                                                                                    5457
                                                                                                                                                                                                       5397
                                                                                                                                                                                                                                         5337
                                                                                                                                                                                                                                                                            5277
                                                                                                                                                                                                                                                                                                               5217
                                                                                                                                                                                                                                                                                                                                                 5157
                                                                                                                                                                                                                                                                                                                                                                                     5097
                                                                                                                                                                                                                                                                                                                                                                                                                        5037
                                                                                                                                                                                                                                                                                                                                                                                                                                                           4977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4677
        cDNA encoding
                         08-AUG-2000
                                           AAA14812;
                                                            AAA14812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                 455
                                                                                                                                                                                                                                                                                                                                                                   435
                                                                                                                                                                                                                                                                                                                                                                                                      415
                                                                                                                 575
                                                                                                                                                   555
                                                                                                                                                                                     535
                                                                                                                                                                                                                        515
                                                                                                                                                                                                                                                          495
                                                                                                                                                                                                                                                                                            475
                                                                                                                                                                                                                                                                                                                                                                                                                                          395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                335
                                                                                                                                                                                                    AlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaProAlaArgSerPro
                                                                                                                                                                                                                                                 AlaAlaProGlnProHisProProProAlaPheSerProAlaPheAspAsnLeuTyrTyr
                                                                                                                                                                                                                                                                                    AspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGly
                                                                                                                                                                                                                                                                                                                       AlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsnGlyValLys
                                                                                                                                                                                                                                                                                                                                                          ProAspValArgProGlnProProSerProArgGluGlyProLeuProAlaAlaArgPro
                                                                                                                                                                                                                                                                                                                                                                                    GAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAATATGTGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                            ValHisH19ArgHisArgSerSerSerThrArgSerGlyGlyGlyAspLeuThrLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGCGCCTGGGGGCATG
                                                                                               AGCTATTCCAGAAGTAGT
                                                                                                                                                                                                                                        GACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCCGAGTACTTGACACCCCAGGGAGGA
                                                                                                                                                                                                                                                                                                              GCTGGTGCCACTCTGGAAAGGGCCCAAGACTCTCTCCCCAGGGAAGAATGGGGTCGTCAAA
                                                                                                                                                                                                                                                                                                                                                 GTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGACCTGACACTAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTGGATGCTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AsnLeuSerArgAspThr
                                                                                                                                 AGTCCGCAG----AAGCCCTGATGTGTCCTCAGG-----
                                                                                                                                                SerProSerThrGlnProTrpGluHisValAsnAlaIleGlnGluAlaArgArgLeuLeu
                                                            standard;
                         (first entry)
        the SPLICE erbB-2 receptor
                                                            CDNA; 4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----GlyAlaGlyGlyMet 334
                                                                                               5579
                                                            ВP
        protein
                                                                                                                                 -GAGCAGGGAAGGCGGCCTCTG
                                                                                                                                                                    -GTGTGAACCAGAAGGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                        414
                                                                                                                                                                                                                       534
                                                                                                                                                                                                                                                          514
                                                                                                                                                                                                                                                                                                              5276
                                                                                                                                                                                                                                                                                                                                474
                                                                                                                                                                                                                                                                                                                                                                                                                      5096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4736
                                                                                                                                                                    5510
                                                                                                                                                                                                      5456
                                                                                                                                                                                                                                        5396
                                                                                                                                                                                                                                                                            5336
                                                                                                                                                                                                                                                                                            494
                                                                                                                                                                                                                                                                                                                                                 5216
                                                                                                                                                                                                                                                                                                                                                                  454
                                                                                                                                                                                                                                                                                                                                                                                    5156
                                                                                                                                                                                                                                                                                                                                                                                                    434
                                                                                                                                                                                                                                                                                                                                                                                                                                                         5036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               354
                                                                                                                                                                                     554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           394
              Ş
                                 B
                                                  Š
                                                                   밁
                                                                                    Ş
                                                                                                       밁
                                                                                                                      Ş
                                                                                                                                                                                              Score:
                                                                                                                                                                                                                                Pred.
                                                                                                                                                                                                              Alignment
                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                          Claim
                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Muller WJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200020579-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                      ..
289
                                  229
                                                                    178
                                                                                                       118
                                                   38
                58
                                                                                     18
                                                                                                                        N
       ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly
                                          GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer
CCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGGTGCAGGGA
                                  GGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGT
                                                                                                                                                                                                                                                                                                                                                                          4; Fig 1;
                                                                                                                                                                                                                                4472
```

В Š 밁 Š 밁 Ş 밁 Ş 밁 ş 밁 δ 밁 Š 밁 Ş 망 Ş В Š 밁 5 밁 δ 밁 ő 밁 Ş В Š 망

77

288

```
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                              US-09-821-883-2 (1-690)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    conserved cysteine residues, compared to the unspliced protein. The erbB-2 polynucleotide is used to construct probes for detecting disorders of cell transformation such as cancer. Antibodies to the protein may be used to detect SPLICE erbB-2 in a sample. Agents (e.g. antisense oligonucleotides) which inhibit the expression of SPLICE erbB-2 are useful for reducing tumor cell proliferation and treating cancer. Substances which stimulate SPLICE erbB-2 are useful for treating conditions involving damaged cells including conditions in which degeneration of tissue occurs, such as arthropathy, bone resorption, inflammatory diseases, degenerative disorders of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPLICE erbB-2 receptor protein; cell transformation disorder; tumor cell proliferation; tissue degeneration; arthropathy; bone resorption; inflammatory disease; degenerative disorder; wound healing; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence encodes a SPLICE erbB-2 receptor protein protein has an in-frame deletion of 16 amino acids, 2 of which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nucleic acid encoding an erbB 2 receptor protein erbB-2, inhibitors of the protein are useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             resorption, inflammatory diseases, degene central nervous system and wound healing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYMC-) UNIV MCMASTER
GAGCTGGCCGCCTTGTGCCGCTGG------GGGCTCCTCCTCGCCCCTCTTGCCCCCC
                                                                                             CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCGGAGCCGCAGTGAGCACCATG
                                                                                                                                               ArgAlaAlaProLeuLeuLeuAlaArgAla----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000-303768/26.
DB; AAY84780.
                                            PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Siegel PM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0165192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-CA00912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers 175..3942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                                          1.33e-97
2418.00
41.06%
40.67%
64.67%
21
                                                                                                                                                                                                                                                                                                                                                                                                                                                902 A; 1383
                                                                                                                                                                                           x AAA14812 (1-4472)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "SPLICE erbB-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1328
                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                       Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein"
                                                                                                                                            ----AlaSerLeuSerLeuGly 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         designated treatment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d SPLICE
of cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer;
228
                                                                                             177
                                              37
```

0		1428	9 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC	Db 136	9
B .		329	9	32	O
0 0		1368	09 GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG	Db 130	⊇
} \{		329		Оу 329	O
0 5		1308	9 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG	Db 124	໘
} {		329		ОУ 329	O
? 8		1248	9 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCCAGTTACCAGT	Db 118	0
2 5		329		Оу 329	0
פ פ		1188	AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCCAAGCCCTGT	Db 1129	D
į Ç		329	29	0у 32	0
Db 43		329 1128	8 CysProTyrAsnTyrLeuSerThrAspValGlySer	ОУ 318 ВЬ 1069	0 0
- E		1068.	TTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGTGACTGCC	00 da	0
, Q		317	8 PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla	Qy 29	0
Db		1008	9 AACCACAGTGGCATCTGTGAGCTGCACCTGCCCAGGCCCTGGTCACCACACACA		0
Qy		297	8 AsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThr	Qy 27	0
B 4		277 948	8 GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe 	Qy 25 Db 88	0 0
- B		888	29 GTCTGTGCCGGTGGCCTGCCACGCACACGGGCCACTGCCCACTGACTG	Db 82	٥
ş Ş		257	8 ValCysAlaGlyClyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGlu	Оу 23	0
da da		237 828	CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr	Qy 218 Db 769	0 0
ο B		768		7	ם
ρ		217	8 LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet	0у 19	0
Db .5	. •	197 708	8 ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln 	Oy 17 Db 64	0 0
dg - 0		177 648	8 GluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleĠlnArgAsn 	Qy 15 Db 58	9 0
Qy D	• .	588	AATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCCAGGAGGCCTGCGG	UI	D
P 09		157	8 ASNGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg	Оу 13	0
Db S		137 528	LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp 	Oy 118 Db 469	0 0
5 g		117 468	8 GluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArg	Оу 9 Въ 40	0 0
D J		97 408	8 AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln	Qy 7 Db 34	0 0
Oy					

329	3	329	Qy	
2508	ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 2	2449	Дb	
329	3	329	Qy	
2448	TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2	2389	Db	
329	3	329	Оу	
2388	GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2	2329	Db	
329	3	329	ОУ	
2328	CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2	2269	Дb	
329		329	Qy	
2268	CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2	2209	Db	
329		329	Qy	
2208	GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTCTTTGGGATCCTCATCAAGCGACGG 2	2149	Дb	
329		329	Qy	
2148	GACAAGGGCTGCCCCGCCGAGCAGAGAGCCAGCCCTCTGACGTCCATCATCTCTGCGGTG 2	2089	Db	
329		329	Qy	
2088	GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT 2	2029	Ф	
329		329	νο	
2028	CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGAT 2	1969	Дb	
329		329	Qy	
1968 .	CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	1909	дь	
329		329	οy	
1908	CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1	1849	дg	
329		329	Оу	•
1848	GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGGCTCCCCCAGGGAGTATGTGAATGCCAGG 1	1789	ф	
329		329	Qy	
1788	CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1	1729	дb	
329		329	· Qy	
1728	CGGCCAGAGGACGAGTGTGTGGGGGGAGGGCCTGGCCTG	1669	дb	
329		329	Оу	
1668	ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1	1609	дb	
329		329	Оу	
1608	AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC 1	1549	рь	
329		329	Оу	
1548	GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	1489	da	
329		329	Оу	
1488	CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATTCTGCACAAT 1	1429	дb	
329		329	Оу	

		<b>.</b>
i in ω	roLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGl	ע מ נ
410 3528	GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal	391 3469
390 3468	GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeu 	371 3409
370 3408	LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer 	351 3349
350 3348	AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAsp	331 3289
330 3288	GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC	330 3229
3228	CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTG	6
329		329
3168	ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	3109
329		329
3108	TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC	3049
329		329
3048	ATGTCTACATGATCAT	2989
329		329
2988	GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG	2929
329		329
2928	TTCACCCACCAGAGTGATGTGTGGGAGTTATGGTGTGACTGTGTGGGGAGCTGATGACTTTT	2869
329		329
2868	GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG	2809
329		329
2808	GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT	2749
329		329
2748	GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCCAACCAT	2689
329		329
2688	TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT	2629
329		329
2628	CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC	2569
329		329
2568	TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA	2509

8 B

밁

Ş

B 64 B

S B

Ş

 Ş

оу оу оу ор

Ş

유 양 명

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAZ31071
This is the human HER-2 polynucleotide sequence. The HER-2 gene also called c-neu and ErbB2, encodes a transmembrane receptor, with tyrosine kinase activity. HER-2 is related to the epidermal growth factor receptor (EGFR or HER-1). Aberrant HER-2 expression is present in a wide number of cancers, especially breast, ovarian and gastric cancers. This sequence is used in the invention to design 12-25 nucleotide oligonucleotides that decrease the expression is present in event oligonucleotides of the invention (AAZ31067-Z31070) can also be used for modulating the expression of human epidermal growth factor receptor. The oligonucleotides are used to treat diseases or conditions associated with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3649
                                                                                                                                                               New antisense sequences especially cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                HER-2; c-neu; ErbB2; transmembrane receptor; tyrosine kinase activity; epidermal growth factor receptor; EGFR; HER-1; cancer; breast cancer; ovarian cancer; gastric cancer; antisense oligonucleotide; expression; hyperproliferative disease; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAZ31071;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3589
                                                                                                                                      Examples; Page 38-39; 44pp; English.
                                                                                                                                                                                                   WPI; 1999-610749/52
                                                                                                                                                                                                                            Bennett CF,
                                                                                                                                                                                                                                                   (ISIS-) ISIS
                                                                                                                                                                                                                                                                                          26-MAR-1998;
                                                                                                                                                                                                                                                                                                                  25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                           30-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                   W09948906-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HER-2 nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAZ31071 standard; DNA; 4473
                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCAGAAGGCCAAGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AlaArgSerProSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AsnLeuTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCCGAGAGGGCCCCTCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA-----GTGTGA 3942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACCTCTATTACTGGGACCAGGACCCACCAGAGCGGGGGGGCTCCACCCAGCACCTTCAAA
                                                                                                                                                                                                                                                     PHARM
STATE
                                                                                                                                                                                                                            Lipton A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                          98US-0048804
                                                                                                                                                                                                                                                                                                                  99WO-US06492.
                                                                                                                                                                                                                                                     RES
                                                                                                                                                                                                                                                      FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3960
                                                                                                                                                                            used to treat hyperproliferative conditions,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              556
                                                                                                                                                                                                                            Witters
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В₽
                                                                                                                                                                                                                             Ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                510
```

Db 2029 GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGGACCTGGAT 2088	9 AACCACAGTGGCATCTGTGAGCTGCACCTGCCCAGGCCCTGGTCACCAACACACAGACACG 10
Оу 329 329	278 AsnHisSerGlvTleCvsGl::[e::HisCvsDrOalale::ValThrTvrAsnThrAsnThr
Db 1969 CGCTGCCCCAGCGGTGTGAAACCTGACCTCCTACATGCCCATCTGGAAGTTTCCAGAT 2028	QY 238 GINCYSALAALAGIYCYSTARGLYPROLYSHISSERASPCYSLEUALAGYSLEUHLSPHe 277
Оу 329 329	
Db 1909 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTTCCCTTCTGCGTGGCC 1968	Qy 238 ValCyaAlaGlyGlyCyaAlaArgCysLyGlyProLeuProThrAspCysCysH1sGlu 257
Оу 329 329	COST TO TUNDOCTOCTOCTOCTOCOMPANAMOSTIC TOMORATITO TOMOROCCITANOCCACACI
Db 1849 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1908	Qy
Qy 329 329	200 CARRELLA LA CARRELLA CARRE
Db 1789 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTGAATGCCAGG 1848	1
Оу 329 329	100 T
Db 1729 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1788	Qy 178 PrOGINLeuCysTyrGinAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln 197
Оу 329 329	389 GAGCIGCAGCTICGAAGCCTCACAGAGAICTIGAAAGGAGGGGTCTTGAICCAGCGGAAC 64
Db 1669 CGGCCAGAGGACGAGTGTGTGGGCCGAGGGCCTGGCCTG	158 GluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsn 17
Qy 329 329	529 AATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCTCCCCAGGAGGCCTGCGG
1609 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC	138 AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg 1
Oy 329 329	DD 409 CTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCCGTGCCTAGAC 528
1549 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCACC	118 LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp 137
1489 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	98 GluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArg 11
Оу 329 329	349 AACCIGEACCIACCIACCACCAAIGCCAGCCIGICCTICCIGCAGGAIAICCAG
Db 1429 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT 1488	Asnicella in the composition of
Оу 329 329	10
Db 1369 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1428	Qy 38 FIGHTUTHISHEHASPMETLEHARISHSTOTTGTCASCGCTGCGGGGGGGGGGGGGGGGGGGGGGGGGGG
Оу 329 329	229 GOMBOUND THE CARBOTTS THE ACCUSE ACADA CATROAGE THE CHECK TO COME
Db 1309 GAGAGCTTTGATGGGGACCCCAGCCTCCAACACTGCCCCGCTCCAGCCAG	38 GIYALAALASerThrGLnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer 57
Оу 329 329	20 01:11:11:01:01:01:01:01:01:01:01:01:01:0
1249 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG	euAspArgSerValLeuAlaLysGluLeuAlaArg
329 329	Db 118 CGCGCCTCCCAGCCGGGTCCAGCCGGAGCCATTGGGGCCGGAGCCGCAGTGAGCACCATG 177
1189 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT	ω.
329	US-09-821-883-2 (1-690) x AAZ31071 (1-4473)
1129 AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT	20 Gaps:
329	Similarity: 40.67% Mismatches: h: 64.67% Indels:
Qy 318 CysProTyrAsnTyrLeuSerThrAspValGlySer	S NO.
Db 1009 TTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCAGCTGTGTGACTGCC 1068	Scores:
Oy 298 PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla 317	XX SQ Sequence 4473 BP: 902 A: 1383 C: 1329 G: 859 T: 0 other:
	0.000

	329		QY 329
٠.		ATGGCCAGGGACCCCCAGCGCTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	. <u>.</u>
	GAATTCTCCCGC 3108	FIGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC	Db 3049
	329		Оу 329
. •	ATGGTCAAATGT 3048	) GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT	Db 2989
	329		Оу 329
	CTGGAAAAGGGG 2988	) GGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCCTGACCTGCTGGAAAAGGGG	Db 2929
	329		Оу 329
	CTGATGACTTTT 2928	$oldsymbol{ ext{TTCACCCACCAGAGTGATGTGGAGTTATGGTGTGACTGTGGGAGCTGATGACTTTT}$	Db 2869
	329		Оу 329
	CTCCGCCGGCGG 2868	GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG	Db 2809
	329		Оу 329
	ACAGAGTACCAT 2808	GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT	Db 2749
	329		Qу 329
	AGTCCCAACCAT 2748	GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT	Db 2689
	329		Оу 329
	TACCTGGAGGAT 2688	TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT	Db 2629
-	329		Qу 329
	GGACGCCTGGGC 2628	CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC	Db 2569
	329		Оу 329
	CAGCTGGTGACA 2568	TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA	Db 2509
	329		Оу 329
	GCTGGTGTGGGC 2508	ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC	Db 2449
	329		Оу 329
	TTGAGGGAAAAC 2448	) TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC	Db 2389
	329		Оу 329
	TACAAGGGCATC 2388	GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC	Db 2329
	329		Qу 329
	CTGAAAGAGACG 2328	) CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGGATCCTGAAAGAGACG	Db 2269
	329		Оу 329
•	SAGCTGGTGGAG 2268	CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	Db 2209
	329		Оу 329
	ATCAAGCGACGG 2208	GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG	Db 2149
	329		Qy 329
:	ATCTCTGCGGTG 2148	GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCATCTCTGCGGTG	Db 2089
	329		Оу 329

H.B.	× S	XXXX	X E	Y D F	ξĄ;	မ	32	망	VΩ	В	Qy	Ф	Qy	В	γ	DЬ	Qγ	Db	γQ	Db	γΩ	Db	γQ	Дb	δδ	Db	Qy	Db	Qy	Db	Qy	ДЪ	Qy	Db
Key CDS	Homo	Humaı hype: tumoı	Humaı	23-SI	AAD3	8904 AAD36	LT 14	3943	551	3889	531	3829	511	3769	491	3709	471	3649	451	3589	431	3529	411	3469	391	3409	371	3349	351	3289	331	3229	330	3169
Location/Qualifiers 1753942	sapiens.	<ul><li>n; Her-2; epidermal growth factor receptor 2; infection; cancer rproliferative disorder; prophylaxis; inflammation; antisense; ur; gene therapy; phosphorothicate backbone; gene; ss.</li></ul>	n Her-2 DNA.	EP-2002 (first entry)	8904;	904 Standard; DNA; 4473 BP.			rgSerProSerPro 556	GGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCAGTGTGA 3	lyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspVal	AACCTCTATTACTGGGACCAGGACCCAGCAGCGGGGGGGCTCCACCCAGCACCTTCAAA 3	nLeuTyrTypAspGlnAspProProGluArgG	CCCCAGGGAGCTGCCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGAC	${\tt roGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPhe}$	GGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGTGCCGTGGAGAACCCCGAGTACTTGACA 3	lyValValLysAspValPheAlaPheG	GCTGCCCGACCTGCTGGTGCCACTCTGGAAAGGCCCCAAGACTCTCTCCCCAGGGAAGAAT 3	gProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsn 4	TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCGAGAGGGCCCCCTGCCT 3	TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 4	CCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCTGACCTGCAGCCCCCAGCCTGAA 3	roLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 4	CAAAGCCTCCCCACACATGACCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGTA 3	lnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal 4	GAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCTG	luGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeu 3	GACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTGGCACCCTCC	euThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSe	CCTGGGGGCATGGTCCACCACGGGACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGGAC 3	aGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGly	ω- ω-	Gly 3	CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTG 3
	-		:	٠.				,		3942	. Ú	888	530	1828	016	3768	190	3708	170	648	50	588	30	528	10	468	061	408	70	348	50	288	30	228

648

177

197

```
Best Local Si
Query Match:
DB:
           Ş
                                                 Š
                                                                                          Ş
                               밁
                                                                       밁
                                                                                                                  В
                                                                                                                                    Ş
                                                                                                                                                          В
                                                                                                                                                                             á
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                              US-09-821-883-2 (1-690) x AAD38904 (1-4473)
                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores
                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to antisense compounds targetted to a nucleic acid molecule encoding Her2 (human Epidermal Growth Factor receptor 2) that specifically hybridises with and inhibits the expression of Her2. Antisense compounds of the invention are used for treating diseases or conditions associated with Her2 such as hyperproliferative disorders e.g. lung, breast, gastric, oesophageal, colon, bladder, salivary, neural or cardiac cancer. They are also useful prophylactically e.g. to prevent or delay infection, inflammation and tumour formation. The invention is also used in gene therapy. The present sequence is human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel antisense oligonucleotide which modulates th Epidermal Growth Factor receptor, Her2, is useful inflammation or to prevent infection in humans -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bennett CF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12-SEP-2001;
                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ISIS-)
                               409
                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200222636-A1
           118
                                                                         349
                                                                                                                                                                                                                                              118
                                                                                                                   289
                                                                                                                                                            229
                                                                                                                                                                                                     178
                                                    98
                                                                                              78
                                                                                                                                       58
                                                                                                                                                                                38
                                                                                                                                                                                                                          18
                                                                                                                                                                                                                                                                  N
                             LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp
                                                                                                                                                                                                    GAGCTGGCGGCCTTGTGCCGCTGG-------GGGCTCCTCCTCGCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                        ArgAlaAlaProLeuLeuLeuAlaArgAla------AlaSerLeuSerLeuGly
                                                                                                                                                                                                                      PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                                                                             CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGGCCGGAGCCGCAGTGAGCACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2002-471192/50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ISIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAE24067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cowsert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-0663834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001WO-US28572
                                                                                                                                                                                                                                                                                                                                                                                            BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a
/product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94-101; 116pp; English.
                                                                                                                                                                                                                                                                                                        1.33e-97
2418.00
41.06%
40.67%
64.67%
                                                                                                                                                                                                                                                                                                                                                                                           902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ĕ
                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                            1383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Human Her-2
                                                                                                                                                                                                                                                                                                                                                                                           Ç
                                                                                                                                                                                                                                                                                                                                                                                            1329
                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                           <u>ი</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein"
                                                                                                                                                                                                                                                                                                                                                                                           859
                                                                                                                                                                                                                                                                                                                                                                                           Ŧ;
                                                                                                                                                                                                                                                                                                                                                                                           0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the expression 
l for treating
                                                                                                                                                                                                                                                                                                                                         4473
523
5
                                                                                                                                                                                                                                                                                                                               22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of Huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tor 2)
Her2.
           137
                               468
                                                                       408
                                                                                            97
                                                                                                                 348
                                                                                                                                     77
                                                                                                                                                          288
                                                                                                                                                                               57
                                                                                                                                                                                                                       37
                                                                                                                                                                                                                                            177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Or.
                δ
                                        망
                                                          Q
                                                                                 В
                                                                                                     Ş
                                                                                                                                              Š
                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
밁
                                                                                                                           Вb
                                                                                                                                                                    망
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                            1369
                                                                                                                                                                                                                                                       1189
                                                                                                                                                                                                                                                                                                                                         1069
                                                                                                                                                                                                                                                                                                                                                                                 1009
                                         1489
                                                                                                                                                                                                             1249
                                                                                                                                                                                                                                                                                                1129
                                                                                                                                                                                                                                                                                                                                                                                                                         949
                                                                                                                                                                                                                                                                                                                                                             318
                                                                                                                                                                                                                                                                                                                                                                                                                                              278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  469
                                                                                                                                                                                                                                                                                                                                       AsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC
                                                                                  CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATTCTGCACAAT
                                                                                                                                                                     AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT
                                                                                                                                                                                                                                                                                                                                                                                TTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCCAGCTGTGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                          PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg
                                         GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC
                                                                                                                                                                                                             GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG
                                                                                                                                                                                                                                                       GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                          AACCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAACACAGACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTGCAGCTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGGCCTCCCCAGGAGGCCTGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGAC
```

11,28

329

1068

1008

948 297 888

257

277

217 768 237 828

317

1608

1548

329

1488

329

1368

329

329

1308

329

1248

1188

49	. — Qy		
370	qq	2629 TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 2688	Db 2
47	Оy	329 329	QΥ
364	מט	2569 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGGAAAACCGCGGGACGCCTGGGC 2628	Db 2
3	J 1	329 329	Qy
4.		2509 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2568	рb 2
358	Db		
43	Ωy	2449 ACATCCCCCAAGCCAACAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 2508	
352	Db		
41	. Oy	TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC	
346		329 329	Qγ
39	Qy	2329 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2388	Db 2
ب 140	D	329 329	Оу
27		2269 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2328	Db 2
ມ ພຸດ 10	D. 49	329 329	Ωу
35		2209 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2268	pb 2
	· ·	329 329	Qy
2 6		2149 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG 2208	Db 2
	D (\$	329 329	γQ
. L	2 6	2089 GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCATCTCTGCGGTG 2148	Db 2
3 7	D (\$	329 329	Qy
3 6		2029 GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGGACCTGGAT 2088	Db 2
310	P &	329 329	Ϋ́
ں د د		1969 CGCTGCCCCAGCGGTGTGAAACCTGACCTCCCTACATGCCCCATCTGGAAGTTTCCAGAT 2028	Db 1
200	p	329 329	Qy
2 0		1909 CCGGAGGCTGACCAGTGTGTGGCCCTGTGCCCACTATAAGGACCCCTCCCT	Db 1
) ) ) ) )	p 08	329 329	Qy
292	, Db	1849 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1908	рь 1
	5	329 329	Ωy
, i	· •	1789 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTGAATGCCAGG 1848	Db 1
ט ט		329 329	γ
	0 8	1729 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1788	Db 1
380	J !	329 329	VQ.
32	0 <b>v</b>	1669 CGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG 1728	Db 1
274	da	329 329	γ
32	0v !	1609 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1668	Db 1
268	Db 5	329 329	Qy
يد د	_		

																									_
фф	pb Qy	Дb	Qу	Qy Db	Фр	Qy Db	Qy Db	р 1	Q 5	y Qy	DЪ	Qy	Db 5	§ B	Qy	ДЬ	Qy	Дb	Qy	Дb	Qy	Ф	Ωy	В	Qy
471 3709	451 3649	431 3589	411 3529	391 3469	371 3409	351 3349	331 3289	2	330	32	3109	ω	4 4	2989	329	2929	329	2869	329	2809	329	2749	329	2689	329
GlyvalvalLysAspvalPheAlaPheGlyGlyAlavalGluAsnProGluTyrLeuThr 	AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerProGlyLysAsn 	TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro	ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 	GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal 	GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeu 	LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer 	AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAsp 	ATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCC	CCTTOGACAGCACCTTCTACCGCTCACTGCTGCAGGACGATGACATGGGGGGACCTGGTG		ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG		GGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCG	GAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAAATGT		GGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG		TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCŢGATGACTTTT		GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG		GTCAAAATTACAGACTTCGGGCTGGCTGGCTGGACATTGACGAGACAGAGTACCAT		GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT	
490 ·	470 3708	450 3648	430 3588	410 3528	390 3468	370 3408	350 3348	N		29	3168	Ö	- 6	3048	329	2988	329	2928	329	2868	329	2808	329	2748	329

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
Ş
                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                 US-09-821-883-2 (1-690)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                             Treating receptor
                                                                                                                             The present invention provides a method of treating cancer by administering a conjugate of anti-ErbB antibody with a maytansinoid. particular, the antibody is directed against ErbB2 (also known as HE and pl85neu). The method is particularly useful in the treatment of breast, overian, stomach, endometrial, salivary gland, lung, kidney, breast, overian, stomach, endometrial, salivary gland, lung, kidney,
                                                                                                                                                                                                                                                                                                                                                                                                                                 HER2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3889
                                                                                                                                                                                                   conjugating
                                                                                                                                                                                                                                                WPI;
                                                                                                                                                                                                                                                                                                25-JUN-1999;
16-MAR-2000;
                                                                                                                                                                                                                                                                                                                                            04-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                             Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                      antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3829
                                                                                                       Sequence 9274
                                                                                                                                                                                    Example
                                                                                                                                                                                                                                                                Erickson
                                                                                                                                                                                                                                                                                                                                                                                                                                                03-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAF24297 standard;
                                                                                                                                                                                                                                                                                 (GETH )
                                                                                                                                                                                                                                                                                                                          23-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                             WO200100244-A2
                                                                                                                                                                                                                                                                                                                                                                                       HOMO
                                                                                                                                                                                                                                                                                                                                                                                                                Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        511
 N
                                                                                                                                                                                                                                      2001-061962/07
DB; AAB60167.
                                                                                                                                                                                                                                                                                                                                                                                                                               transgene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ArgAlaAlaProLeuLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPheLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCAGAAGGCCAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaArgSerProSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACCTCTATTACTGGGACCAGGACCCACCAGGAGCGGGGGGGCTCCACCCAGCACCTTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                       HER2;
dy; ds
                                                                                                                         colorectal,
                                                                                                                                                                                                                                                                                 GENENTECH INC.
                                                                                                                                                                                                   tumors, particularly breast cancers,
and does not respond to an anti-ErbB
ing the antibody to a maytansinoid -
                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                   F1g 4;
                                                                                                                                                                                                                                                                                                99US-0141316.
2000US-0189844.
                                                                                                                                                                                                                                                                                                                           2000WO-US17229
                                                                                                                                                                                                                                                                                                                                                                                                               ErbB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                (first
                                                                                                        BP;
                                                                                                       2152
                                                                                                                                                                                  92pp; English.
                                3.58e-97
2415.00
41.04%
40.35%
64.59%
22
                 x AAF24297
                                                                                                                                                                                                                                                                                                                                                                                                               receptor; p185neu; maytansinoid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA;
                                                                                                                        thyroid,
                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                77
                                                                                                      ۶,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     556
                                                                                                       2539
                                                                                                                        pancreatic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВP
                 (1-9274)
                                                                                                       ü
                                          Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                       2488
                                                                                                      63
                                                                                                                        prostate
                                                                                                       2095
                                                                                                                                                                                                          which overexpress an antibody, comprises
                                                                                                      Η.
                                  9274
527
9
32
738
                                                                                                                        and bladder
                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                               conjugate;
                                                                                                       other;
                                                                                                                                                                                                                                                                                                                                                                                                               cancer;
                                                                                                                                                 id. In
HER2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3828
21
                                                                                                                                                                                                                     ErbB
                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
        õ
                         망
                                         οy
                                                           В
                                                                           δ
                                                                                             В
                                                                                                            Š
                                                                                                                                В
                                                                                                                                               Qy
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1695
                                                            2637
                                                                                               2577
                                                                                                                                 2517
                                                                                                                                                                                                    2397
                                                                                                                                                                                                                                      2337
                                                                                                                                                                                                                                                                        2277
                                                                                                                                                                                                                                                                                                         2217
                                                                                                                                                                                                                                                                                                                                           2157
                                                                                                                                                                                                                                                                                                                                                                             2097
                                                                                                                                                                                                                                                                                                                                                                                                               2037
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1797
                                                                                                                                                                   2457
                                                                                                                302
                                                                                                                                                                                  262
                                                                                                                                                                                                                     242
                                                                                                                                                                                                                                                      222
                                                                                                                                                                                                                                                                                        202
                                                                                                                                                                                                                                                                                                                          182
                                                                                                                                                                                                                                                                                                                                                            162
                                                                                                                                                                                                                                                                                                                                                                                             142
                                                                                                                                                                                                                                                                                                                                                                                                                                122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22
                                                           GlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPheAsnHisSerGly
                                                                                                                                                                                                             GlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGluGlnCysAlaAla
                                                                                                                                                                                                                                                                      ThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThrHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCCCCGCGCCTCCCAGCCGGGTCCAGCCGGAGCCATGGAGCTGGCG---
                                                                                                                                IleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSerMet
                                                                                                                                                                                                    GGCTGTGCCCGCTGCAAGGGGCCACTGCCCACTGACTGCCATGAGCAGTGTGCTGCC
                                                                                                                                                                                                                                     CGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGCCTGACGCGCACTGTÇTGTGCCGGT
                                                                                                                                                                                                                                              ArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAlaGly
                                                                                                                                                                                                                                                                                                                                                                                     LeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                        ArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAspPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAlaSer
                                                                                                                                                                                                                                                                                                                                                                             CTGAACAATACCACCCCTGTCACAGGGGGCCTCCCCAGGAGGCCTGCGGGAGCTGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                               CGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGACAATGGAGACCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGTCCCGAGACCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGTGCCGCTGG------GGGCTCCTCCTCGCCCTCTTGCCCCCGGAGCCGCGAGC
                          ACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGTGCCCGAGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          င္ပ
                                                                                                                                                                                                                                                      241
                           27.56
                                                            2696
                                                                                                                                                                                                   2456
                                                                                                                                                                                                                     261
                                                                                                                                                                                                                                      2396
                                                                                                                                                                                                                                                                        2336
                                                                                                                                                                                                                                                                                                         2276
                                                                                                                                                                                                                                                                                                                                           2216
                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                               2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1745
                                                                                              2636
                                                                                                                                2576
                                                                                                                                                 301
                                                                                                                                                                   2516
                                                                                                                                                                                   281
                                                                                                                                                                                                                                                                                                                          201
                                                                                                                                                                                                                                                                                                                                                                                             161
                                                                                                                                                                                                                                                                                                                                                                                                                                141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41
                                                                              329
                                                                                                                321
                                                                                                                                                                                                                                                                                         221
                                                                                                                                                                                                                                  مر:
د
```

	3837 AGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACGGAGCTGAGGAAG 3896	Db 38
	329	Qy
	3777 CGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAGCCGCTGACACCT 3836	Db 37
	329 329	Qy
	3717 CTGGTCGTGGTCTTGGGGTGGTCTTTGGGATCCTCATCAAGCGACGGCAGCAGAAGATC 3776	Db 37
	329 329	Qy
	3657 CCCGCCGAGCAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGTTGGTT	Db 3
	329 329	Qy :
	3597 TGCCAGCCTTGCCCCATCAACTGCACCCCACTCCTGTGTGGACCTGGATGACAAGGGCTGC 3656	Db 3:
•	329 329	9
:	3537 GGTGTGAAACCTGACCTCCTACATGCCCATCTGGAAGTTTCCAGATGAGGAGGGCGCA 3596	Db 3:
	329 329	Qy
	3477 CAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCTTCTGCGTGGCCCGCTGCCCCAGC 3536	Db 34
-	329 329	Qy
	3417 TGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGACCGGAGGCTGAC 3476	Db 34
-	329 329	Qy
	3357 GAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGGCACTGTTTGCCG 3416	Db 3:
	329 329	ογ
	3297 CCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAGGAGTGCGTGGAG 3356	Db 3;
	329 329	<b>Ω</b> γ
	3237 GAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGGCACTGCTGGGGT 3296	Db 3;
	329 329	Qy ::
-	3177 GACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAACCGGCCAGAGGAC 3236	Db 31
	329 329	Qy
<u> </u>	3117 AGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCACACGGTGCCCTGG 3176	Db 31
	329 329	Qy
	3057 CTGACCCTGCAAGGGCTGGGCATCAGCTGGGCTGGGGCTCACTGAGGGAACTGGGC 3116	Db 3(
	329 329	Qy 3
P*	2997 AGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAATGGCGCCCTACTCG 3056	Db 29
•	329 329	Qy 3
•	2937 CTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGCCTGCCT	Db 29
	329 329	Qy 3
· 	2877 GGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAGAGCAGCTCCAAGTGTTTGAGACT 2936	Db 28
	329 329	Qy
	2817 GAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCGGAGAGCTTTGAT 2876	Db 26
	329 329	Qy
_	2757 TATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGTGCCAATATCCAG 2816	рь 27

37 49	355 LeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSerGluGlyAlaGly	Оу
س حد	335 ValhishisargHisArgSerSerSerThrArgSerGlyGlyGlyAspLeuThrLeuGly	Оу
<b>.</b>	4797 TATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGGGGCGCTGGGGGCATG	Db 43
4 د	37 ACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTGGATGCTGAGGA	Db
ω	329	Оу
47	4677 CCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	. Db
329	329	Оу
467	4617 TCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGCATGGCCAGGGAC	Db
w	329	Qy
461	4557 CAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGTTGGATGATTGAC	Db
329	329	Qy
4	4497 TACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGGGAGCGGCTGCCC	Db
32	329	Оу
44	4437 AGTGATGTGTGGAGTTATGGTGTGACTGTGGGGAGCTGATGACTTTTGGGGCCAAACCT	рь
329	329	Qy
44	4377 AAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGGTTCACCCACC	Db
329	329	ОУ
437	4317 GACTTCGGGCTGGCTGGGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGC	Dъ
329	329	Qy
431	4257 CACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACA	Db
32	329	Qy
4	4197 CTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGATGTGCGCCTCGTA	Db
w	329	Qy.
41	4137 TATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGACGCCTGGGCTCCCAGGACCTG	Db
329	329	Qy
413	4077: TCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACACAGCTTATGCCC	Db
329	329	Qy
407	4017 GCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGCTCCCCATATGTC	дь
w	329	Оу
401	3957 GGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAACACATCCCCCAAA	ф
32	329	Qy
39	3897 GTGAAGGTGCTTGGATCTGGCGCCTTTTGGCACAGTCTACAAGGGCATCTGGATCCCTGAT	Дb
329	329	Qy

```
Ş
                                         Š
                                                       밁
                                                                    Š
                                                                                  밁
                                                                                                Ş
                                                                                                               ₽
                                                                                                                           Ş
                                                                                                                                           В
                                                                                                                                                       8
                                                                                                                                                                                   Ş
                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                           Ş
 ₽
                             밁
                                                                                                                                                                       밁
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                  Š
 5562
                             5511
                                                                                    5397
                                                                                                               5337
                                                                                                                                                                       5217
                                                                                                                                                                                                                                                         5037
                                                        5457
                                                                                                                                           5277
                                                                                                                                                                                                  5157
                                                                                                                                                                                                                                                                                      4977
                                                                                                                                                                                                                            5097 GAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAATATGTGAACCAG
                                                                      535
                                                                                                                                                                                    455
                                                                                                                                                                                                                435
                                          555
                                                                                                 515
                                                                                                                             495
                                                                                                                                                         475
                                                                                                                                                                                                                                    415 GluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGluTyrValAsnGln 434
                                                                                                                                                                                                                                                                                                   375
                                                     AlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsnGlyValValLys 474
                                                                                  TrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGlyThrProThr 534
                                                                                                            AsnLeuSerArgAspThr 580 ::: ||||||| ::: AGCTATTCCAGAAGTAGT 5579
                                      SerProSerThrGlnProTrpGluHisValAsnAlaIleGlnGluAlaArgArgLeuLeu
                                                                                                                                                                                                         ProAspValArgProGlnProProSerProArgGluGlyProLeuProAlaAlaArgPro
                            AGTCCGCAG----AAGCCCTGATGTGTCCTCAGG----
                                                                                                                                                                                                 --GAGCAGGGAAGGCGGCCTCTG
                            5561
                                                       5510
                                                                                                                                                                     5276
                                                                                  5456
                                                                                                               5396
                                                                                                                                          5336
                                                                                                                                                                                                 5216
                                                                                                                                                                                                                             5156
                                                                                                                                                                                                                                                         5096
                                                                                                                                                                                                                                                                                    5036
                                         574
                                                                    554
                                                                                                                                                       494
                                                                                                                                                                                                               454
                                                                                                                                                                                                                                                                       414
```

Search completed: May 8, 2003, 13:04:15 Job time: 1665 secs

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -WODEL-frame+_p2n.model -DEV=xlp
-Q-/cgn2_1/USPTO_spool/US9821883/runat_28042003_104749_14566/app_query.fasta_1.839
-Q-/cgn2_1/USPTO_spool/US9821883/runat_28042003_104749_14566/app_query.fasta_1.839
-DB-GenEmbl -OFMT-fastap -SUFFIX-p2n.rge -MINMATCH-0.1 -LOOPCL-0 -LOOPEXT-0
-UNITS-bits -START=1 -END--1 -MATRIX-blosum62 -TRANS-human40.cd1 -LIST-45
-DOCALIGN-200 -THR_SCORE-pct -THR_MAX-100 -THR_MIN-0 -ALIGN-15 -MODE-LOCAL
-OUTFMT-pto -NORM-ext -HEAPSIZE-500 -MINLEN-0 -MAXIEN-200000000
-USER-US9821883_GCGN_1 _3745_Grunat_28042003_104749_14566 -NCPU-6 -ICPU-3
-NO_XLPXY -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -LONGLOG -DEV_TIMEOUT-120
-WARN_TIMEOUT-30 -THEADS-1 -XOAPOP-10 -XGAPEXT-0.5 -FGAPOP-6 -FGAPEXT-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YGAPOP-10 -YGAPEXT-0.5 -DELOP-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-821-883-2
3739
1 MRAAPLLLARAASI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2054640 segs, 14551402878 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MRAAPLILARAASISIGFLF....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.4_p5_4578
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                              gb_pr:*
gb_ro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_ba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8, 2003, 10:54:14; Search time 4337 Seconds (without alignments) 4630.144 Million cell updates/sec
                                      em_or: *
em_ov: *
em_pat: *
em_ph: *
em_pl: *
                                                                                                                                                                                                                                                                                                                                                                                                           gb_ph:*
em_sts:*
em_un:*
                                                                                                                                                                                                  em_hum:*
em_in:*
                                                                                                                                                                                                                                                                                9b_v1:*
                                                                                                                                                                                                                                                                                                                          gb_sts:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in_in:*
                                                                                                                                                                                                                                                               em_ba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 b_htg: *
                                                                                                                                                                em_om:*
                                                                                                                                                                                 em_mu:*
                                                                                                                                                                                                                                            em_fun:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     b_pat:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        b_ov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             b_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.5
0.5
7.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ....ЕРVQEGAPPPPAAAННННН 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4109280
```

```
30: em_htg_lnv:*
31: em_htg_lnv:*
32: em_htg_lnv:*
33: em_htg_nus:*
34: em_htg_nus:*
35: em_htg_rod:*
36: em_htg_rvd:*
37: em_htg_rwam:*
37: em_htg_mam:*
38: em_sy:*
40: em_htgo_nus:*
41: em_htgo_nus:*
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	1.6	<u>ا</u> د	10	. 9	8	7	on.	<sub>U</sub>	4	ω	2	ц	No.	Result
1183	1183	1183	$\vdash$	9	1587	1613	1647	1680.5	1955	1961	1961	1968	1968	1968	1968	2124.5	2129	2130	2188.5	2258.5	2258.5	2258.5	2405.5	2405.5	2405.5	2405.5	2405.5	2410.5	2410.5	2410.5	2416	2410	2422	2423	2423	2423	2423	2423	2423	2959.5	2974	3473.5	73	Score	
31.6	-	-	31.8	32.1	42.4	43.1	44.0	44.9	52.3	52.4	52.4			52.6						60.4	60.4	60.4	64.3	64.3	64.3	64.3	64.3	64.5	64.5	64.5	64.7	64.	04.0	4	64.8		64.8			9.	79.5	92.9	100.0	: -	Query
1773	1767	5	1806	9	9	$\mathbf{H}$	1872	7	4062	77	77	3955	95	95	95	78	76	78	4	38	38	38	3768	76	76	76	76	76	76	76	4473	3 4	1473	53	53	53	53	· w	w	69	99	2091	07	Length	
6	σ,	σ	σ	0	0	9	0	6	10	6	6	10	6	6	6	4	6	σ	σ	σ	6	6	6	σ	0	σ	6	6	σ,	σ,	ه م	<b>n</b> c	n a	· ψ	σ	σ	6	σ	σ	σ	σ	σ	φ	BB	
AX384610	AX384607	8	AX384608	AX268307	AX268303	AF177761	AR181000	AX023363	HAMNEU	N	σ	핃	159750	121129	92	45	AX380942	8094	28	394	AR099963	AR082744	AX465456	AX384604	AX380923	18	AR034479	•	AX467229	<b>~</b> 1 1	HSERB2R	AN 167300	200	ER2	I59745	·N	BD005474	25	AR202597	0	AX268285	AX268288	268	ID	
AX384610 Sequence	•	_	s	8307 S	8303	7761	· AR181000 Sequence · .	3363	629	0925	9662	3362 R	750 Sequence	129 Se		Ω		AX380944 Sequence	S	S		4	65456	84604	80923	01817	34479	81438	67229	6070	X03363 Human c-erb	2000	000	730 Hu	745	1124 Sequence	474 Cellula	82577	02597	68287	8285	68288	68286	Description	

ALIGNMENTS

```
RESULT 3
AX268285
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                          REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                     밁
                                                                                                                                                              δ
                                                                                                                                                                                В
                                                                                                                                                                                          δ
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                            FEATURES
                                                                                                                                                     2041
                                                                                                                                                                                 1981
                                                                                                                                                                                                             1921
                                                                                                                                                                                                                                        1861
                                                                                                                                                                                                                                                                     1801
                                                                                                                                                                                                                                                                                                1741
                                                                                                                                                                                                                                                                                                                             1681
                                                                                                                                                                                                                                                                                                                                                        1621
                                                                                                                                                                                                                                                                                                                                                                                    1561
                                                                                                                                                                                                                                                                                                                                                                                                                1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1321
                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                           1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                          472
                                                                                                                                                                   672
                                                                                                                                                                                              652
                                                                                                                                                                                                                          632
                                                                                                                                                                                                                                                      612
                                                                                                                                                                                                                                                                                  592
                                                                                                                                                                                                                                                                                                              572
                                                                                                                                                                                                                                                                                                                                          552
                                                                                                                                                                                                                                                                                                                                                                      532
                                                                                                                                                                                                                                                                                                                                                                                                  512
                                                                                                                                                                                                                                                                                                                                                                                                                              492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 432
                                                                                                                                                   GlnGlyLeuArgGlySerLeuThrLysLeuLysGlyProLeuThrMetMetAlaSerHis
                                                                                                                                                                                                                                                                                                                          GAGGATTTCATAAAGAACCTTAAAGGCTTTCTGTTTGATATCCCTTTTGACTGCTGGAAG
                                                                                                                                                                                       GluSerPheLysGluAsnLeuLysAspPheLeuLeuVallleProPheAspCysTrpGlu
                                                                                                                                                                                                                                        SerGluMetPheAspLeuGlnGluProThrCysLeuGlnThrArgLeuGluLeuTyrLys
                                                                                                                                                                                                                                                                                                LeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLysGly
                                                                                                                                                                                                                                                                                                                                                                                                                      GlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAspAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThrPro
                                                                                                                                                                                                                                                                                                        ArgLeuLeuAsnLeuSerArgAspThrAlaAlaGluMetAsnGluThrValGluValIle
                                                                                                                                                                                                                                                                                                                                                                                    CTCTATTACTGGGACCAGGACCCACCAGAGCGGGGGGCTCCACCCAGCACCTTCAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                CAGGGAGGAGCTGCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCGTCAAAGACGTTTTTGCCTTTGGGGGTGCCGTGGAGAACCCCGAGTACTTGACACCC
                                                                                                                                                                                                                                                                    TCTAATGAGTTCTCCATCCAGAGGCCGACATGTGTGCAGACCCGCCTGAAGCTATACAAG
                                                                             synthetic synthetic
                                                                                                          Sequence
AX268285
                          Laus, R., Vidovic, D. and Graddis, T. Compositions and methods for dendritic Patent: WO 017485-A 6 11-OCT-2001; DENDREON CORPORATION (US)
LOCATION/Qualifiers
                                                                                                    AX268285.1
                                                                                                                        AX268285
                                                                       rtificial
                                                                                                                6
/organism="synthetic construct"
/db_xref="taxon:32630"
/note="HER500 construct"
                      1. .1665
                                                                             construct.
                                                                                                                from
                                                                       sequences
                                                                                                                Patent
                                                                                                                1665 bp
WO0174855.
                                                                                                                        DNA
                                                 cell-based
                                                                                                                        linear
                                                immunotherapy
                                                                                                                        PAT
                                                                                                                                                                 690
                                                                                                                        29-OCT-2001
                                                                                                                                                                                             671
                                                                                                                                                                                                           1980
                                                                                                                                                                                                                                                                                                                                                                                                               1560
                                                                                                                                                                                                                                        1920
                                                                                                                                                                                                                                                     631
                                                                                                                                                                                                                                                                    1860
                                                                                                                                                                                                                                                                                                1800
                                                                                                                                                                                                                                                                                                                           1740
                                                                                                                                                                                                                                                                                                                                                        1680
                                                                                                                                                                                                                                                                                                                                                                      551
                                                                                                                                                                                                                                                                                                                                                                                                531
                                                                                                                                                                                                                                                                                                                                                                                                                                           1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 451
                                                                                                                                                                                                                          651
                                                                                                                                                                                                                                                                                  611
                                                                                                                                                                                                                                                                                                              591
                                                                                                                                                                                                                                                                                                                                         571
                                                                                                                                                                                                                                                                                                                                                                                    1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                          491
                                                                                                                                                                                                                                                                                                                                                                                                3 .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
       밁
                  õ
                                밁
                                             Ş
                                                              B
                                                                           δÃ
                                                                                          밁
                                                                                                        δÃ
                                                                                                                       밁
                                                                                                                                   Qy
                                                                                                                                                   밁
                                                                                                                                                               Qy
                                                                                                                                                                                밁
                                                                                                                                                                                           Qy
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-821-883-2 (1-690) x AX268285
                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                            161
                                                                                           661
                                                                                                                        601
                                                                                                                                                   541
                                                                                                                                                                                481
                     281
                                                261
                                                               721
                                                                             241
                                                                                                         221
                                                                                                                                     201
                                                                                                                                                                 181
                                                                                                                                                                                                           421
                                                                                                                                                                                                                         141
                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                        121
                                   781
                                                                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                             81
                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                     41
                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                21
                                                                                                                                                                                                                                                                                                                                                                                                                             نر
                                                                                                                                                                                                                                                                                                                                                                                                               \vdash
                                                                                                                                                                                                                                                                                               LeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAla
                                          AlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPheAsnHisSer
                                                                      GlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGluGlnCysAla
                                                                                                                       ValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAsp
                                                                                                                                                                                                                                                                                                                                                      SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla
                                                                                                                                                                                                                  ProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGln
                                   CCGCTGAACAATACCACCCCTGTCACAGGGGCCCTCCCCAGGAGGCCTGCGGGAGCTGCAG
                                                                                                                                                                                                                                        GTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGACAATGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                    CTGCTTTTTTTCTGGCTAGACCGAAGTGTACTAGCCAAGGAGTTGGCGCGCGGGGCCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.05e-101
2974.00
99.46%
99.46%
79.54%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        465
                                                                                                                                                                                                                                                                                                                                                                                                                                           (1-1665)
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        c
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1665
554
0
1
                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                              100
                     300
                              840
                                                280
                                                                             260
                                                                                           720
                                                                                                         240
                                                                                                                        660
                                                                                                                                      220
                                                                                                                                                   600
                                                                                                                                                                 200
                                                                                                                                                                                540
                                                                                                                                                                                                            480
                                                                                                                                                                                                                          160
                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                     140
                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                         80
                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                40
                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                780
```

...

÷:

/organism="synthetic construct" /db_xref="taxon:32630" /note="HER500* construct"  BASE COUNT 338 a 573 c 470 g 311 t	TITLE Compositions and methods for dendritic cell-based immunotherapy JOURNAL Patent: WO 0174855-A 8 11-OCT-2001; DENDREON CORPORATION (US) FEATURES LOCATION/Qualifiers	synthetic construence synthetic construence artificial seque	AX268287.1 GI:16541539	n i	Qy 541 LeuGlyLeuAspValProAlaAlaAlaProAlaArgSerProSerProSer 557	Qy 521 GluArgGlyAlaProProSerThrPheLysGlyThrProThrAlaGluAsnProGluTyr 540	Qy 501 ProProProAlaPheSerProAlaPheAspAsnLeuTyrTyrTrpAspGlnAspProPro 520	Qy 481 GlyAlaValGluAsnProGluTyrLeuThrProGlnGlyGlyAlaAlaProGlnProHis 500	Qy 461 ArgAlaLysThrLeuSerProGlyLysAsnGlyValValLysAspValPheAlaPheGly 480	Qy 441 ProProSerProArgGluGlyProLeuProAlaAlaArgProAlaGlyAlaThrLeuGlu 460	Qy 421 AlaProLeuThrCysSerProGlnProGluTyrValAsnGlnProAspValArgProGln 440	Qy 401 LeuGlnArgTyrSerGluAspProThrValProLeuProSerGluThrAspGlyTyrVal 420	Qy 381 AspLeuGlyMetGlyAlaAlaLysGlyLeuGlnSerLeuProThrHisAspProSerPro 400	Qy 361 GluAlaProArgSerProLeuAlaProSerGluGlyAlaGlySerAspValPheAspGly 380	Db 1021 AGCTCATCTACCAGGAGTGGCGGTGGGGGACCTGACACTAGGGCTGGAGCCCTCTGAAGAG 1080	321 AsnTyrLeuSerThrAspValGlySerGlyAlaGlyGlyMetValH1sH1sArgH1sArg	Qy 301 MetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyr 320
. ab	Qy Db	Оу	Qy	Qy	Qy Db	Qy Db	Qy Db	Qy Db	Qy Db	Qy Db	Qy Db	Qy Db	Qy Db	Оу	-50	Score Perce Best Query	ORIG
301 MetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAlaCysProTyr 320	AlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPheAsnHisSer 	GlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGluGlnCysAla 	221 SerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAla 240 	201 ThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMetCysLysGly 220	181 CYSTYTGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGlnLeuAlaLeu 200 	161 LeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsnProGlnLeu 180 	141 ProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGln 160 	121 ValargGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAspAsnGlyAsp 140 	101 GlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArgLeuArgIle 120. 	81 LeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGlnGluValGln 100 	61 HisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGlyAsnLeuGlu 80 	41 SerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSerProGluThr 60 	21 LeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArgGlyAlaAla 40.	1 MetArgAlaAlaProLeuLeuAlaArgAlaAlaSerLeuSerLeuGlyPheLeuPhe 20	09-821-883-2 (1-690) x AX268287 (1-1692)	re: 2959.50 Matches: 554 cent Similarity: 97.88% Conservative: 0 t Local Similarity: 97.88% Mismatches: 1 ry Match: 79.15% Indels: 12	IN  No.:  1.40-100  I.ength: 16

RESULT 5 AR202597 LOCUS DEFINITION Sequence 4 from patent US 6365151. ACCESSION AR202597 VERSION AR202597 VERSION AR202597.1 GI:21498768 EYMORDS SOURCE Unknown. ORGANISH Unclassified. TITLE 1 (bases 1 to 4530) AUTHORS TITLE Cellular immunogens comprising cognate proto-oxogenes FEATURES LOCATION/QUalifiers SOURCE 1, 4530 LOCATION/QUalifiers SOURCE 1, 4530 LOCATION/QUalifiers 1, 4530 LOCATION/	901 ATGCCCANTCCGGAGGCCGCTRACATTCGGCCGCCAGCTGTGTGTGACTGCCTAC 960 91 ATGCCCANTCCGGAGGCCGCTRACATTCGGCCGCCAGCTGTGTGTGCCTAC 960 92 32 AANTTCLEUSETDTAAPPAIGLYSET
218 CyslysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLepThrArgThr [	Alignment Scores:  Percent Similarity:  41.14  41.14  41.14  Conservative:  524  Freed. No.:  Percent Similarity:  41.14  41.14  41.14  Conservative:  524  Freed. Stanilarity:  41.14

3145 CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTG 3204	. l pb	
329 329	Оу	
3085 ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	dd	GAGGAGGGGGATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT
329 329	Qy	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3025 TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTUTCCCGC 3084	Db	CGCTGCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGAT
329 329	Qy	
2965 GAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 3024	Db	CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT
329 329	Qy	
2905 GGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAAGGGG 2964	Db	CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA
329 329	Qy	
2845 TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT 2904	da	GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGAAGTATGTGAATGCCAGG
329 329	Qy	
2785 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 2844	Db	CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTTCCTTTCGGGGCCAG
.329 329	Qy	
2725 GTCAAAATTACAGACTTCGGGCTGGCTGGCTGGTGGACATTGACGAGAÇAGAGTACCAT 2784	ДĎ	SON COLOS COMO LO COLOS
329 329	Qy	
2665 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 2724	Db	ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC
329 329	Qy	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2605 TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 2664	. da	AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC
329 329	Qy	
2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC 2604	Db	1465 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGGCTGGGGCTGCGCTCACTG 1524
329 329	Qy	
TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA	Db	1405 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT 1464
329 329	Ϋ́	329 329
ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC	Db	1345 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1404
	у	329 329
TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC	Db	1285 GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCGGCTCCAGGCCAGAGCAGCTCCAA 1344
329 329	Oy	
2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2364	Db	GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG
329 329	Qy	
2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGGATCCTGAAAGAGACG 2304	Db	GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT
329 329	Qy	
2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2244	Db	АРССАРАСИЛЕНИЯ СОВСЕДЕНИЯ В СТЕТЕЛЬНИЕ В В В В В В В В В В В В В В В В В В В
329 329	Qy	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGUGACGG 2184	. Db	1045 TGTCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCTCGTCTGCCACCTTGCAC 1104
329 329	Qy	Cropromuraeonmuraeon Cormbraeon (La Cormbraeon (La Cormbraeon) (La Cormbraeon (La Cormbraeon)
2065 GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG 2124	Db	

0 dy 0 dy

 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0

```
DEFINITION
ACCESSION
VERSION
                                                                                                                       KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                     RESULT 6
AX282577
                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           `5
                                                                                        REFERENCE
                                  FEATURES
                                                                                                                                                                                         Locus
                                                      AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                      3919
                                                                                                                                                                                                                                                                                 3865
                                                                                                                                                                                                                                                                                                                              3805
                                                                                                                                                                                                                                                                                                                                                                        3745
                                                                                                                                                                                                                                                                                                                                                                                                                   3685
                                                                                                                                                                                                                                                                                                                                                                                                                                                              3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3205
                                                                                                                                                                                                                                                             551
                                                                                                                                                                                                                                                                                                       531
                                                                                                                                                                                                                                                                                                                                                  511
                                                                                                                                                                                                                                                                                                                                                                                             491
                                                                                                                                                                                                                                                                                                                                                                                                                                        471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LeuThrLeuGlyLeuGluProSerGluGluAlaProArgSerProLeuAlaProSer 370
                                                                                                                                                                                                                                                                                                                          ASDLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys 530
                                                                                                                                                                                                                                                                                                                                                                    GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsn 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAsp 350
                                                                                                                                                                                                                                     ACCAGAAGGCCAAGTCCG 3936
                                                                                                                                                                                                                                                           AlaArgSerProSerPro 556
                                                                                                                                                                                                                                                                                 GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA----
                                                                                                                                                                                                                                                                                          GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCCGAGAGGGCCCCTCTGCCT 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAA 3564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                 GGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGTGCCGTGGAGAACCCCCGAGTACTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGCCCGACCTGCTGCCACTCTGGAAAGGGCCCAAGACTCTCTCCCCCAGGGAAGAAT 3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGAC
                                                                                                                                                                 Sequence 1 from Patent W00168677.
                                        Nicolette, C.A.
Therapeutic compounds
Patent: WO 0168677-A 1 20-SEP-2001;
GENZYME CORPORATION (US)
                                                                                                             Eukaryota;
                                                                                                                       Homo sapiens
                                                                                                                                                         AX282577.1
                                                                                                  Mammalia;
                                                                                                                                    human.
                                                                                                 Eutheria;
 /organism="Homo sapiens"
/db_xref="taxon:9606"
                                Location/Qualifiers
                                                                                                                                                         GI:16609668
                        .4530
                                                                                                 Chordata;
Primates;
                                                                                                 Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                         DNA
                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                               -GTGTGA 3918
                                                                                                                                                                                         PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GLy
                                                                                                                                                                                         02-NOV-2001
                                                                                                                                                                                                                                                                                                     550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3264
                                                                                                                                                                                                                                                                                                                            3864
                                                                                                                                                                                                                                                                                                                                                                                                                 3744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
ð
                      В
                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
 158
                    GluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsn
```

```
922
                                                                                                                                                                                                                                                                                                                                          THE ALLON-"MELANCE WIGHLE PROAASTQVCTGTDMKLRLE ASPETHLD
MLRHLY QGCOVYQGNLELTY LPINASLS FLQDIOEVQGY VLI AHHQVRQY PLQRLEIV
RGTQLF EDNY ALAV LDNGDP LNUTTP VTGAS PGGLRELQLRS LTE IL KGGV LIQRNPQ
LCYQDTILWKDIFHKNNQLALTLIDTNES RACHPCS PMCKGS RCGGSCRGSCLTRT
VCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNT
DTFESHPNPEGRYTFGASCVTACPYNYLSTDVGSGTLVCPLHNQEVTAEDGTQRCEKC
SKPCARVCYGLGMEHLAEVRAVTSANLOEFAGCKIFGSLAFLDES FOODPAS NTAPL
QPEQLQVFETLEE ITGYLY IS AWPDSLPDLSVFQNLQVIRGRILHNGAY SLTLQGLGI
SWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDDLFRHPHQALLHTANRP EDECVCEG
LACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLOGLPREY VNARHCLPCHPE
CQQNUSSVTCFGSEADQCVACAHY KDDPSFCVARCPSGVKPDLSYMPIWKFFDEEGACQ
PCFINCTHSCVDLDDKGCPAEQRASPLTS I VSAVVGILLYVVLGVVFGILIKRROOKI
RYTHRRLLOETELVED LTP SGAMPNQAMHILKETELKEKV VLGSGAFGTYVKG JAI
PDGENVKIPVAIK VLRENTS FRANKE ILDEAVVMAGVGSPYVSRLLGICLTSTVQLVT
QLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKSP
NHYKTTDFGLARLLDLDETEYHADGGKVPIKWAALESILRRFFTHQSDVMSYGVFWB
NHYKTTDFGLARLDLDETEYHADGGKVPIKWAALESILRRFFTHQSDVMSYGVFWB
     þ
                                                                                                                                                WATFGAKRYDGIPAREIPOLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFREL
VSEFSKARARDPQRFVVIQNEDLGPASPLDSTYYRSLLEDDDMGDLVDAESYLVPQQGF
FCPDDAPGAGGMVHHRHRSSSTRGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDQ
DLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVR
POPHPPPAFSPAFDNLYYWDODPPERGAPPSTFKGTPTAENPEYLGLDVPV"
1382 c 1346 g 880 t
                                                                                                          PQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /protein_id="CAD10597.1"
/db_xref="GI:16609669"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="unnamed protein product"
```

US-09-821-883-2 (1-690) x AX282577 (1-4530) Percent Similarity:
Best Local Similarity:
Query Match: 1.49e-80 2423.00 41.14% 40.75% 64.80% Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:

Db Qy	Db Qy	Оу	Qy Db	Qy Db	Qу Db	Qy	
118	385	78 325	58 265	38 205	18 154	94 2	
LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp 137 	GluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArg 117 	AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln 97	ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly 77 	GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer 57	PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg 37.	ArgAlaAlaProLeuLeuLeuAlaArgAla	
37	1.4	4 .	24	. 4	, ,	17 · 153	•

	### PROGRESS OF THE PROGRESS O	2725 GTCAAAATTACAGACTTCGGGCTGGCTGGCTGGTGGACATTGACGAGACAGAGTACCAT	. — <sub>Db</sub>	
		329	Qy	29
		65	рь	3.63 PACECLAGGE ACCULATORAL CONTRACTORAL CON
		329	Qy	20 ASSESSMENT SESENT SESENT SESENT SES OF SESENT SESENT SES OF SESENT SES OF SESENT SES OF SESENT SES OF SE
		2605 TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGGATGAGCTACCTGGAGGAT	. Db	3000370TD000770TD0070T00070T00070T0070T0
		329	Оу	22
		45	da b	Selicated State
		329	Qy	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		85	дь	CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT 1
		329	Qy	3
		25	Db	GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC
		329	. Oy	329
		65 TGGAT	מם	GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG
		29	Qy	29 3
	### COGCA CONTROLAGORY CONTROLA	2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC	Db	GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 128
		329		29
		245		65 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT
			Qy	29
		85 CAG	Db	AACCAAGAGGTGACAGCAGAGGATGGAACACAGGGGTGTGAGAAGTGCAGCAAGCCCTGT 116
		329	Qy	90
		125	. da	
		329	Qy	8 CysProTyrAsnTyrLeuSerThrAspValGlySer 329
		065 GACAA	Db	85 TTTGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCCAGCTGTGTGACTGCC 104
### CAGCTTCCAACGCTTCCAACACACTTCTGAAACGAGGGGTCTTGATCCAGCGGAAC  ### CAGCTTCCAACGCTTCCACAGAGCTTCTTGAAACGAGGGGTCTTGATCCAGCGGAAC  ### ProGInLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsGAI		329	Qy	98 PheGluSerMetProAsnProGluGlvArgTvrThrPheGlvAlaSerCvsValThrAla 3
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		GAGGA	Db	
		329	Qy	78 AsnHisSerGlvIleCvsGluLeuHisCvsProAlaLeuValThrTvrAsnThrAspThr
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		CGCTG	дь	
		329	Qy	GlnCvsAlaAlaGlvCvsThrGlvProLvsHisSerAspCvsLeuAlaCvsLeuHisPhe
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		CCGGA	Db	
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		329	Qy	ValCysAlaGlyClyCysAlaArqCysLysGlyProLeuProThrAspCysCysHisGlu 2
			da	TGTAAGGGCTCCCGCTGCTGGGGAGAGAGTTCTGAGAGTTGTCAGAGAGCCTGACGCGCACT 8
	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	329	Qy	CvsLvsGlvSerArgCvsTrpGlvGluSerSerGluAspCvsGlnSerLeuThrArgThr 2
### Internal	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	65 GAGTG	da	
	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	329	Qy	8 LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet
		CACTG	bb	
		329	. Оу	8 ProGlnLeuCvsTvrGlnAspThrTleLeuTrpLvsAspTlePheHtsLvsAspAspGln
		645 CGGCC	Db	

8 8 8 8 8 9

함정

B 6 B

문

5 A 5

g 94	329 2785	GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 2
B 5	329 2845	TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACT
Ş	329	
g	2905	⋗
οy	329	
₽	2965	GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATG
δ	329	
B	3025	TCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCC
δ	329	
₽	3085	ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCCAGCCAG
ð	329	
B	3145	TTCTACCGCTCACTGCTGGAGGA
Ş	330	-Gly
Дb	3205	GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC
δ	331	AlaGlyGlyMetValH1sH1sArgH1sArgSerSerSerThrArgSerGlyGlyGlyAsp
В	3265	CTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGA
g Q	351 3325	LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer 
Ş	371	pGlyAspLeuGlyMetGlyAlaAlaLysGly
Ф	3385	AAGGGCTGCCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCC
Ş	391	GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal
В	3445	AAAGCCTCCCCACACATGACCCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGT
ρ δ	411 3505	ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu
δô	431	yrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPr
Вb	3565	TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCCTTCGCCCGAGAGGGCCCCTCTGCCT
οy	5	AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerProGlyLysAsn
망	3625	CTGCCCGACCTGCTGGCCACTCTGGAAAGGGCCAAGACTCTCTCCCCAGGGAAGAA
B 8	471 3685	GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr
Qγ	491	roGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAs
ઠ	3745	CCCAGGGAGCTGCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGAC
3 8	511	AsnLeuTyrTyrTrpAspClnAspProProCluArgGlyAlaProProSerThrPheLys

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 7
BD005474
LOCUS
DEFINITION
ACCESSION
VERSION
S
                                             Ş
                                                                                          δÃ
                                                                                                                   밁
                        밁
                                                                     밁
                                                                                                                                        Qy
                                                                                                                                                                  밁
                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                В
                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ő
                                                                                                                                                                                                                                                              US-09-821-883-2 (1-690) x BD005474 (1-4530)
                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                      Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                531
                                                                      265
                                                                                                                    205
                                                                                                                                                                  154 GAGCTGGCGGCCTTGTGCCGCTGG------GGGCTCCTCCTCGCCCCTCTTGCCCCCC 204
  98
                                               78
                                                                                             58
                                                                                                                                            38
                                                                                                                                                                                          18
                                                                                                                                                                                                                 94
                                   ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly
                                                                                                                    GGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGT
                                                                                                                               GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer
                                                                                                                                                                                  PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AlaArgSerProSerPro 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArg 117
                                                                      CCCGAGACCCACCTGGACATGCTCCGCCACCTCTACCAGGGCTGCCAGGTGGTGCAGGGA
                                                                                                                                                                                                                CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCGGAGCCGCAGTGAGCACCATG 153
                                                                                                                                                                                                                                      ArgAlaAlaProLeuLeuAlaArgAla----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCAGAAGGCCAAGTCCG 3936
                                                                                                                                                                                                                                                                                                                                                                                                                                                       OS Unidentifia
PN JP 20015019
PN JP 20015019
PF 13-JAN-199
PR 19-JAN-199
PR 19-JAN-199
PR MICHAEL S
PC A01K63/00, A
Strandedness: CC Topology: I
FH Key
FT source
FT source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BD005474
Cellular
BD005474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 4530)
Halpern,M.S. and England,J.M.
Cellular immunogens useful cancer vaccines
Patent: JP 2001501909-A 4 13-FEB-2001;
ALLEGHENY UNIVERSITY OF THE HEALTH SCIENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BD005474.1 GI:18633845
JP 2001501909-A/4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                            922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unidentified
JP 2001501909-A/4
                                                                                                                                                                                                                                                                                                                                                                                                                         /organism-'Unidentified'.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immunogens useful cancer vaccines
                                                                                                                                                                                                                                                                                                                                                                                           /organism="unidentified"
/db_xref="taxon:32644"
1382 c 1346 g 88
                                                                                                                                                                                                                                                                                              1.49e-80
2423.00
41.148
40.758
64.808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4530 bp
                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                     Indels:
Gaps:
                                                                                                                                                                                                                                                                                                             Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                               880
                                                                                                                                                                                                                                       ----AlaSerLeuSerLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAT 31-JAN-2002
                                               97
                                                                      324
                                                                                             77
                                                                                                                    264
                                                                                                                                            57
                                                                                                                                                                                          37
                                                                                                                                                                                                                                         17
```

2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC 2604	da	•	ź
329 329	Qy	329	Ş
2485 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCA:CTGGTGACA 2544	da	1405 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATTCTGCACAAT	<u></u>
329 329	Qy	329	ò
2425 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 2484	Db	Db 1345 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1404	멅
	Oy	Оу 329 329	9
TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC	; Db	Db 1285 GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG	₽
	. Oy	Оу 329 329	9
GASCTGAGGAAGGTGAAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGSGCATC	DB	Db 1225 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 1284	₽
		Оу 329 329	S
CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG	Db	1165 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGCCAGTTACCAGT	₽
	Qy	Qy 329 329	9
CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	Db	1105 AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT	멅
329 329	Оу	329	္
2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG 2184	Db		<u> </u>
329 329	Qy	318 CvaProTvrAqnTvrLeuSprThrAqnValGlvSer	ò
2065 GACAAGGGCTGCCCGCCGAGCAGAGAGCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG 2124	da		P 5
329 329	Qy	298 PheCluSerMotProAsnProCluClvArgTvrThrDheClvAlaserCvsValThrAla	. ر
2005 GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT 2064	מם	925 AACCACAGTGGCATCTGTGAGCTGCCAACCCTTGGTCACCTXCAACACAGAGACACG	₽ .
329 329	Qy	278 AsnHisSerGlvTlervsGlnIenHisGvsDroAlaTenValThrTvrhenThrhanThr	9 ;
1945 CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCCATCTGGAAGTTTCCAGAT 2004;	дь	A	B 5
329 329	ν	מומים ומיים ביותר בשות בשות בשות בשות בשות בשות המשפח למיים	<u> </u>
1885 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCCTTCTGCGTGGCC 1944	рb	QY 238 VALCYSALAGLYGLYGLYGLYGLYGLYGLYGLDFTOTTTRASPCYSCYSHISGIQ 257	<b>2</b> 5
329 329	Qy		? ;
1825 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1884	qā	The cystysotysethigh polystosetsethigh polystosetsether cystysothsether processor so the cystysotysether by statements and statements are cystyles and statements are cystyles and statements are cystyles an	<b>2</b> 5
329 329	Оу	218 0:01:00 :00:01:00:01:00 :00 :00 :00 :00	2
1765 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTGAATGCCAGG 1824	מם	Db 685 CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATG 744	₽ <i>5</i>
329 329	Оу	100   101	2 5
1705 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1764	Db		<b>2</b> 5
329 329	Qy	178 ProGlaiouCvaTvrGlaBaaThrIloIouTraIvaBaaTloDhoHisIvaBaaBeaCla	2
1645 CGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG 1704	Db		p 5
329 329	Qy	158 Clui enclui en aracert en Throll to en tirochi vol i vel to i to enclui con en aracer	2 ;
1585 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1644	dα	Db 505 AATGGAGACCGCTGAACAATACCACCCCTGTCACAGAGGCCTTCCCAGGAGGCCTTCGGG 564	₽ :
329 329	Оу	138	· ;
1525 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC 1584	Db	No.	⊋ 5
329 329	Qy	מוסטים לו מוסים להיים להיי	2
1465 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	Db	Db 385 GAGGTGCAGGGCTACGTGCACCACCAACTGAGGCAGGTCCCACTGCAGAGG 444	₽

Ş	329	32	29
В	2605	TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGGATGAGCTACCTGGAGGAT 26	564
γ	329	32	29
ਰ	2665	GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 27	724
Ŷ	329	32	29
₽	2725	GTCAAAATTACAGACTTCGGGCTGGCTGGGCTGGGACATTGACGAGACAGAGTACCAT 27	784
οy	329	32	29
ф	2785	GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 28	344
Ş	329	32	29
B	2845	TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGGAGCTGATGACTTTT 29	904
δ	329	32	29
뭥	2905	GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG 29	964
δ	329	32	29
В	2965	GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 30	)24
Ş	329	32	29
₽	3025	TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC 30	)84
ş	329	32	29
9	3085	ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	144
Ş	329	32	29
Ъ	3145	CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTG 32	204
δ	330		ŏ
В	3205	GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC 32	264
ð	331	AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAsp 35	50
8	3265	CTGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGG	324
<u> </u>	351 3325	LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer 37	70
Ş	371	luGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLe	ŏ
B	3385	GAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCCAAGGGGCTG 34	144
\$ 5	391	GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal 41	5 6
•			
p S	411 3505	ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 43	564
B 5	431 3565	TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 45	504
δ	451	laAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAs	0
₽	3625	GCTGCCCGACCTGCTGGTGCCACTCTGGAAAGGGCCAAGACTCTCTCCCCAGGGAAGAAT 36	584

					_			
							·	
Qy Db	В Qy	Ф	Dy Og	Дy	Qу	US-09	Alignmer Pred. No Score: Percent Best Loc Query Ma DB:	OY O
98 G 1 385 G	78 <i>1</i> 325 <i>1</i>	58 J 265 (	38 ( 205 (	18 I 154 (	2 A 94 C	-821-	t i is in	Db 3685 d  Oy 491 E  Db 3745 d  Oy 511 P  Db 3805 P  Oy 511 P  Db 3805 P  Oy 511 P  Db 3805 P  Db 3865 d  Oy 511 P  Db 3865 d  Oy 511 P  Db 3865 d  CCUS  Db 3919 P  RESULT 8  RESULT 8  RESION  KEYWORDS  SOURCE  ORGANISM  REFERENCE  AUTHORS  TITLE  JOURNAL  FEATURES  SOURCE  BASE COUNT  BASE COUNT
GLUVAL        GAGGTG	AsnLeu            AACCTG	ProGlu        CCCGAG	SlyAla         GAGCC	PheLeuPheLeuLeuPhePheTrpL 	Argāla         GCGÇC	883-2	Scores : !milari !milari ! Simil	CCCCAGGAGGAGCTCGCAAAGACGTT  ProGlnGlyGlyAlaAla
GlnGly        CAGGG	GluLer       GAACTO	ThrHis        ACCCAC	AlaSei        GCGAG	PheLe	AlaPro	(1-690)	i: ity	yearvally
YTYrVa        CTACGI	uThrTy         ACCTA	SLeuAs               CTGGA	rThrG1	uLeuPh     CTTGTG	oLeuLe     	×	••	SASPVALPHE AGACGTTTTT  yAlaAlaPro
LLeuI.	TLeuP)	PMetL	nValC	ePheTr     CCGCTG	uLeuA. ; ;GTCCA	121124	1.49e-80 2423.00 41.14% 40.75% 64.80%	
leAlaH         CGCTC	roThrA         CACCA	euArgH         CCGCC	ysThre	PheLeuPheLeuLeuPhePheTrpLeuAs 	ArgAlaAlaProLeuLeuAlaArgAla         cccccccccacccggTccagccgaacc	(1-45		ASPPROPRO CAGCCCCACCI CAGCCCCACCI CAGCCCCACCI CAGCCACCI CAGCCACCI CAGCCACCI CAGAGTA  ASP ASS ASS ASS ASS ASS ASS ASS ASS A
isAsn(	SnAlas       ATGCC	isLeuf        ACCTCT	lyThr/        GCACA	pArg	la :: GCCATO	30)	Lengt Match Conse Misma Indel	
luvalGlnGlyTyrvalLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArg 	.snLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln 	roGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly 	GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer 	pArgSerValLeuAlaLysGluLeuAlaArg 	rgAlaAlaProLeuLeuLeuAlaArgAlaAlaSerLeuSer 		Length: Matches: Conservative: Mismatches: Indels: Gaps:	Clyval Vallysaspval Phealarned by Clyval Vallysaspval Prediction (Clyval Vallysaspval Phealarned by Clyval Vallysaspval Prediction (CCCAAAAGACGTTTTTGCCTTTGGGGGTGCCGTGAAAACCCCGAAGTACTTGACA ProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheasp [
ArgGlr        AGGCAC	SerPhe        TCCTTC	Glycys         GCTGC	LysLeu        AAGCTO	LeuAla     CTCCTC	Ala       GGAGCG			GAGAAC Alaph
ValPr        GTCCC	LeuGl	GlnVa         CAGGT	ArgLe	LysGl	AlaSerLeuSerLeuGly    ::::::    GCCGCAGTGAGCACCATG		530 24 36	eserpr          
oLeuGl        ACTGC#	nAspIl         GGATAT	lvalgi         GTGC#	uProAl	uLeuAl     CTTGCC	uSerLe :    GAGCAC		•	OALAPI 
		-		Arg	-			1
117	97 384	77 · 324	57 264	37 204	17 153			3744 3744 3804 3864 550 3918 OCT-1
	• •	· •.·			٠			9

밁

밁 Ş В

Ş

329	Qy Qy		1465 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG
	Qy		
2485 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2544			1405 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT 1464
329	- VO		GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC
	γo		329 329
2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC	Db		
2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTTGGCACAGTCTACAAGGGCATC	da	: .	GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG
329			
2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG	Db		GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCACTTACCAGT
329	У		1103 AACCAANAAGTGACAGAGAAGTGCAGGGGTGTGAGAAGTGCAGCAAGCCCTGT 1164
2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	Db ,		
2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG	0 0		1045 TGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCCTGCAC 1104
1	. Qy		318 CysProTyrAsnTyrLeuSerThrAspValGlySer 329
2065 GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG	дb		
329	ογ		PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla
2005 GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT	Db		2)    Construction
329	γo		AgnH  aSprC  vT  pCvcC  vI b vH  cCvcDroA   aI b vVc   ThraTvrAppahranonThr
1945 CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGAT	Db		258 GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe 277
	Qy !		GTCTGTGCCGGTGGCCCGCTGCAAGGGGCCACTGCCCACTGACTG
1885 CCGGAGGCTGACCAGTGTGTGCCCTGTGCCCACTATAAGGACCCTCCCT			238 ValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGlu 257
1825 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1884	. סמ		TGTAAGGGCTCCCGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGGCCTGACGCGCACT
329	οğ		CvaLvsG1vSerAraCvsTrpG1vG1uSerSerG1uAspCvsG1nSerIeuThrAraThr
1765 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG	da b		
329	νο		1.0.1.2.1.4.1.0.1.0.1.0.1.0.1.0.1.0.1.0.1.0.1.0
1705 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG	dd	<b>.</b> ** .	1/8 PTOGITICHUCYSTYTGITASPTTRITICHUTTPLYSASDITEPREHISLYSASDASRGIN 19/ 
329	Qγ		OND THE THE PROPERTY OF THE PR
1645 CGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG	dd dd		04405008 COLRADOMONIA DE LA COLRADOMONIA DE LA COLRADOR DE LA COLRADOR DO COLRADOR DO COLRADOR DE LA COLRADOR DEL COLRADOR DEL COLRADOR DE LA COLRADOR DEL COLRADOR DELOCADA DEL COLRADOR DEL COLRADOR DEL COLRADOR DEL COLRADOR DEL COL
329	Qy		GluLeuGlnIeuArgSerIeuThrGluTleIeuIvgGlvGlvValIeuTleGlnArgAsn
1585 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC	Db		
329	Qy		AanGlyAanDrolouAanAanAanAhrBrolouAlahanAarahanDrolouAlacanochtaeanAanDrolouAanDrolouAanAanAanAanAarahanDrolouA
1525 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC	dd		
329	- Qy		

Ş В

밁 ş 밁

Ş В Ş Ş

В

밁

á

ð

Qy 11	471 GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr 490	47
,	625 GCTGCCCGACCTGCTGCTGCAAAGGCCCAAGACTCTCTCCCCAGGGAAGAAT 3684	362
Qy 7 Db 32	TATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCTTCGCCCCGAGAGGGCCCTCTGCCT	3565
Db 26	TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 45	4
	411 ProLeuProSerGluThrAspClyTyrValAlaProLeuThrCysSerProGluProGlu 430	35(
Qy 3		34
Db 15	1 GlnSerLeuProThrH1sAspProSerProLeuGlnArgTvrSerGluAspProThrVal 410	ω
Qy 1	371 STUSTYMIGGLYSEKASPVALKHEMSPOLYMSPLEUGLYMGEGGIGAATALYSGLYLEU 390 	338
Db 9	Cludian action and the property of the propert	<u>ب</u> ب
Qy	LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer 370	υ υ ω
Query Ma DB:	331 AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyAsp 350	33 326
Percent Best Loc		320
Pred. No	330G1y 330	w
Alignmen	145 CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTG 3204	314
BASE COU	329 329	ω
FEATURES	085 ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	30
JOURNA	329 329	ω
REFERENC	025 TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGGAGTTGGTGTCTGAATTCTCCCGC 3084	30:
ORGANI	329 329	س
SOURCE	965 GAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 3024	296
ACCESSION VERSION	329 329	μ
DEFINITI	2905 GGGGCCAAACCTTACGATGGGATCCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG 2964	29
RESULT 9 159745	329 329	ω
	845 TICACCCACCAGAGIGATGIGIGGAGITAIGGIGIGACIGIGGGAGCIGAGACITITI 2904	284
	329 329	ω
	785 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 2844	271
	329 329	ω
į,	725 GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT 2784	27:
,	329 329	ω
(L)	665 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 2724	26
	329 329	ω
(4.)	2605 TCCCAGGACCTGCTGAACTGGTGTATGCCAGGTTGCCAAGGGGGATGAGCTACCTGGAGGAT 2664	26

밁

B 8

망

B

B 64 B

04 pp

B 6 B

δ

B

Ş

137	laLeuAlaValLeuAsp ]	nLeuPheGluAspAsnTyrAl	LeuArgIleValArgGlyThrGl	118	Qy
144	AGGTCCCACTGCAGAGG 4	CGCTCACAACCAAGTGAGGCAGGTCC	GAGGTGCAGGGCTACGTGCTCATCGCTCAC	385	Db
117	roLeuGlnArg	eAlaHisAsnGlnValArgG	luValGlnGly	98	Qγ
384		CACCAATGCCAGCCTGTCCT	AACCTGGAACTCACCTACCTGCCCAACCAATGCCAGCCTGTCCTTCCT	325	ф
97	neLeuGlnAspIleGln 9	oThrAsnAlaSerLeuSerP	AsnLeuGluLeuThrTyrLeuPro	78	Qy
77 324		luThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly 	ProGluThrHisLeuAspMetLeu 	58 265	Db. Qy
264	+3 -	CCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAG	GGAGCCGCGAGCACCCAAGTGTG	205	, Db
57	euArgLeuProAlaSer 5	sThrGlyThrAspMetLysL	GlyAlaAlaSerThrGlnValCy:	38	Qy
37 · 204	SerValleuAlaLysGluLeuAlaArg : ::	pArgs	PheLeuPheLeuLeuPhePheTrpLeuAs	18 154	da Vo
17. 153	uGly CATG	ArgAla    ::: CGGAGCCATG	ArgAlaAlaProLeuLeuLeuAlaArgAla-          CGCGCCCTCCCAGCCGGGTCCAGCCGGAGCC		da Vo
• .		(1-4530)	883-2 (1-6	-09-821-	Sn
	4530. 524	Length: Matches: Conservative: Mismatches: Indels: Gaps:	: Scores: 1.49e-80 : 2423.00 similarity: 41.14 il Similarity: 40.75% ch: 64.80%	Alignment Pred. No.: Score: Percent Si Best Local Query Matc DB:	Al Sc Pe Be Qu
		nknown" 1346 g 880 t	922 a	ASE COUNT	· BA
13-	÷	5-AUG-1997; iers	O .	JOURNAL EATURES sourc	F
		oque.	(bases 1 to 4530) Raziuddin and Sarkar,	FERENCE AUTHORS	RE
	•		Unknown.	ORGANISM	SO
	, .			YWORDS	K W A
OCT-1997	linear PAT 07-0	4530 bp DNA t US 5654406.	159745 Sequence 9 from paten	159745 LOCUS DEFINITION	DEC
	, ,			SULT 9	4 70 1 E1
	++		ACCAGAAGGCCAAGTCCG 3936	3919	ДD
	¥		gSerProSerF	551	Qγ
3918 3918	AlaAlaPro	OGluTyrLeuGlyLeuAspV 	GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAla	531 3865	4g 60
8		CCCACCAGAGCGGGGGGCTC	AACCTCTATTACTGGGACCAGGA	05	Дb
530		pProProGluArgGlyAlaP	AsnLeuTyrTypAspGlnAspProProGluArgGlyAlaProProSerThrPheLys	511	γo
3804		GCCCCACCCTCCTCCTGCCT	CCCCAGGGAGCTGCCCCTCAGCCCCACCCTCCTCCTTCAGCCCAGCCTTCGAC	3745	Db
510		nProHisProProProAlaP	ProGlnGlyGlyAlaAlaProGl	491	Qy
3744		CTTTGGGGGTGCCGTGGAGA	GGGGTCGTCAAAGACGTTTTTGCCCTTTGGGGGTGCCGTGGAGAACCCCGAGTACTTGACA	3685	DЬ

Q D

윰 5

망

₽

B 8

2605 TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 2664		329
329 329	Qy	
2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAAACCGCGGGACGCCTGGGC 2604	Db	GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCCTGGGGCTGGCT
329 329	Qy	
2485 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2544	Db	. CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT
329 329	Qy	
2425 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCCTGGTGTGGGC 2484	, Db	GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC
329 329	Qy	
2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2424	Db	GAGAGGTTTGATGGGGACCCAGCCTCCAACACTGCCCCCTTCCAGCCAG
329 329	Qy	
2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2364	Db	GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGGCTTGGCATTTTCTGCCG
329 329	Оу	720
2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG 2304	Db	にして しょく にほじょくじじじょ ていしじ というしょ しょうしょ というしゅうじゅん しゅうしゅう はんしゅう はんしょう しゅうしょう しゅうしょう しゅうしょう しゅうしょう しゅうしゅう しゅうしゅん しゅん しゅんり しゅん
329 329	Qy	THE CONTRACT OF THE CONTRACT O
2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2244	Db	<b>並んほうこうじょく ししょうしゅうしょうじょうしょうしょうしょう とうじょうじゅう とうほうじゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅうしゅ</b>
329 329	Qy	
2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG 2184	Db	
329 329	Oy	CvsDroTvrAsnTvrLeuSerThrAsnValGlvSer
2065 GACAAGGGCTGCCCCGCCGAGCAGAGCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG 2124	Db	TTTGAGTCCATGCCCATCCCGAGGGCCGGTATACATTCGGCGCCACCTGTTTGACTGCC
329 329	· Oy	PheGluSerMetProAsnProGluGlvArgTvrThrPheGlvAlaSerCvgValThrAla
2005 GAGGAGGCCCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT 2064	ממ	925 AACCACACTGGGCATCTTGAACTGCCCAACTCTTGGTCAACTACAACACACAC
329 329	· · · · · · · · · · · · · · · · · · ·	\ankiaserG \vI\pCvaG \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
1945 CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCCATCTGGAAGTTTCCCAGAT 2004	Db	
329 329	У	
1885 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	Db	#30
329 329 .	. Oy	יים ויים ושיים איני מיים אינים
1825 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1884	Db	*10 c/ysu/ysuk/ysuk/ysuk/ysuk/ysuk/ysuk/ysuk/
329 329	Qy	
1765 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTGAATGCCAGG 1824	Db	
329 329	Оу	Tella   alia   imprimenta   alia mara ana ragora ra
1705 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1764	Db	ATO ELECTRONISTA DE LA CARTA DEL CARTA DE LA CARTA DEL CARTA D
329 329	Оу	01000101101010001010101010101010101010
1645 CGGCCAGAGGACGAGTGTGGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG 1704	Db	
329 329	Oy	מיין היינן היינ
1585 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1644	Db	
329 329	Qy	**************************************
1525 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC 1584	Db	

Q

Qy

δ	329		329
용	2665	GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT	2724
QΥ	329		329
₽	2725	GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGGACATTGACGAGACAGAGTACCAT	2784
δ	329		329
Вb	2785	ATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG	2844
QΥ	329		329
ф	2845	TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGGAGCTGATGACTTTT :	2904
ΩY	329		329 .
g	2905	GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG	2964
δ	329		329
В	2965	atctgcaccattgatgtctacatgatcatggtcaaatgt	3024
QΥ	329		329
ф	3025	TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC:	3084
γo	329		329
B	3085	ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	3144
ν	329		329
B	3145	CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTG	3204
γ	330		330
Ф	3205	. සි -	3264
Ŷ	331	lyGlyAsp	350
₽	3265	CTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGCGGTGGGGAC	3324
δĀ	351	LeuThrLeuGlyLeuGluProSerGluGluAlaProArgSerProLeuAlaProSer	370
₽	3325	TGACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTGGCACCCTCC	3384
δ	7	GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlýLeu :	390
5	3383	AAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCCAAGGGGCCTG	3444
οy	391	GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal 4	410
₽	3445	AAAGCCTCCCCACACATGACCCCAGCCCTCTACAGCGGTACAGTGAGGACCCCACAGTA	3504
Ϋ́	411	ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 4	430
В	3505	CCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCTGACCTGCAGCCCCCAGCCTGAA	3564
Qy	431	TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 4	450
g	3565	ATGTGAACCAGCCAGATGTTCGGCCCCAGCCCCTTCGCCCGAGAGGGCCCCTCTGCCT	3624
Ş	451	AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsn 4	470
В	3625	CTGCCCGACCTGCTGGCCACTCTGGAAAGGGCCAAGACTCTCTCCCCCAGGGAAGAA	3684
δ	7	GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr 4	490
밁	3685	GGGTCGTCAAAGACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCGAGTACTTGAC	3744

٠.

```
PUBMED
REFERENCE
AUTHORS
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HUMHER2A
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AlaArgSerProSerPro 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGACACCTACGGCAGAGAACCCAGAGTACCTGGGTCTGGACGTGCCA-----GTGTGA 3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCAGAAGGCCAAGTCCG 3936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAläAlaAlaPro 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Coussens, L., Yang-Feng, T.L., Liao, Y.-C., Chen, E., Gray, A., McGrath, J., Seeburg, P.H., Libermann, T.A., Schlessinger, J., Francke, U., Levinson, A. and Ulrich, A.

Tyrosine kinasa roccara.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (clone: lambda-HER2-436) fetal cDNA to
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertehrata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 (bases 1701 to 1719)
Ullrich, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 shares chromosomal location with neu oncogene Science 230 (4730), 1132-1139 (1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M11730.1 GI:18:
tyrosine kinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86070181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tyrosine kinase receptor with extensive homology to EGF receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2999974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HUMHER2A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R2A 4530 bp mRNA linear PRI 18-SEP-1995
Lyrosine kinase-type receptor (HER2) mRNA, complete cds.
                         QPEQLQVFETLEEITGYLY ISAMPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGI
SWIGLRSLRELGSGLALIHHNTHLCFVHTVPMODLFRNPHQALHTANNFEDECVGEG
LACHQLCARGHCWGPGPTQCVNCSQFLRGDECVCBECRVLQGLPREYVNARHCLPCHPE
CQPQNGSYTCFGFEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPINKFPDEEGACQ
PCPINCTHSCVDLDDKGCPABQRASPLTSIVSAVVGILLVVVLGVVYFGILKRRQQKI
RKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELKYKKVLGSGAFGTTVKGHNI
DGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYSSLLGICITSTVQLVT
OLMPYGCLLDHYRENRGRLGSQDLLNNCMQIAKGMSVLEDVRRLVHRDLAARNVLVKSP
NHVKITDFGLARLDIDETEYHADGGKVPIKMHALESILKENTRLVHRDLAARNVLVKSP
NHVKITDFGLARLDIDETEYHADGGKVPIKMHALESILKENTRLVHRDLAARNVLVKSP
NHVKITDFGLARRLDDIDETEYHADGGKVPIKMHALESILKENTRLVHROLAARNVLVKSP
NHVKITDFGLARRLDDIDETEYHADGGKVPIKMHALESILKENTRLVHROLAARNVLVKSP
NHVKITDFGLARRLDDIDETEYHADGGKVPIKMHALESILKDNBKDLVDAEEYLVPQQGF
LMTFGAKPYDGIPAREIPDLLEKGERLDQPPICTIDVYMIMVKCMMIDSECRRFREL
LMTFGAKPYDGIPAREIPDLLEKGERLDQPPICTIDVYMIMVKCMMIDSECRPRFREL
LMTFGAKPAGNTUNIONENDAGDLAPASPLDSTTYRSLLEDNBKGDLVDAEEYLVPQQGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MELAALCRWGLLLALLPPGAASTQVCTGTDMKLRLPASPETHLD
MLRHLYGGCQVVGGNLELTYLDTNASLSFLQDIQEVGGYVLLAHNQVRQYPLQRLRIV
RGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGLRELQLRSLTEILKGGVLIGRNG
RGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGLRELQLRSLTEILKGGVLIGRNG
RGTQLFEDNYALAVLDNGDPLNTTPVTGASPGLRELQLRSLTEILKGRUFIGSBCQSLTRT
VCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALTTYNT
VCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSGICHAGCHTAGAGTGPKHSGICHAGAGTGPKHSGICHAGAGTGPKHSGICHAGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTGPKHGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DTFESMPNPEGRYTFGASCYTACPYNYLSTDVGSCTLVCPLHNQEVTAEDGTQRCEKC
SKPCARVCYGLGMEHLREVRAVTSANTQEFAGCKKTFGSLAFLPESFDGDPASNTAPL
FCPDPAPGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="lambda-HER2-436"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /protein_id="AAA75493.1"
/db_xref="GI:306840"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="HER2 mRNA"
151. .3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /dev_stage="fetal"
<1. .4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:183986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              codon_start-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Locat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="HER2 receptor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ion/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3804
```

Qy 278 AsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThr 297	Qy 258 GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe 277	805 GTCTGTGCCGGTGGCTGTGCCCGCTGCAAGGGGCCACTGCCCACTGACTG	Oy 238 ValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGlu 257	Db 745 TGTAAGGCCTCCCGCTGCGGGAGAGAGTTCTGAGGATTGTCAGAGCCTGACGCGCACT 804	685 CTGGCTCTCACACTGATAGACACCGCTCTCGGGGCCTGCACCCCTGTTCTCCGATG	Qy 198 LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet 217	5 CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAAGGACATCTTCCACAAGAACAACCAG	178 ProclatenoveTvrGlabenThrTleTenTveBenTleDheuteTveBenTleCheuteTveBenTle	Qy 158 GluLeuGLnLeuArgSerLeuThrGluTleLeuLysGlyGlyVelLeuTleGlnArgAsn 177	שוושטחשה בכשבושאה החו אברה בכרושור אנאטטטטרנורבר אטאאטטרנוטנטט	138 AsnGJyAspProLeuAsnAsmThrThrProValThrGlyAlaSerProGlyGlyLeuArg	THE CHARGE THE CONTRACT OF THE		118 [	TI DISCULLABORATE DISCULLABORATE DATA DATA DE CALCADARDA LA SOCIETA DE SERVICIONE DE CALCADA DE CAL		Db 325 AACCTGGAACTAACCTACCCACCAATGCCAGCCTGTCCTTCCT	78 Agnio::Clirio::ThrTurio::DroThrAgnAlacorio::Corthoio::ClirAgnIloClir	QY 56 PTOGLUTERHISLEUASSMETLEUARTHISLEUTYTGLEGTYCYSGLEVYSGLEVATVALGINGIY //	60 Tabol: Hartis of the state o	QY 38 GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer 57	DD 134 GAGCIGGCGCTTGTGCCGCTGGGGGCTCCTCCTCGCCCCTCTTGCCCCCC 204	18 PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg	Db 94 CGCGCCTCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCGGAGCCGCAGTGAGCACCATG 153		US-09-821-883-2 (1-690) x HUMHER2A (1-4530)	9 Gaps:	Mismatches: Indels:	Pred. No.: 1.49e-80 Length: 4530 Score: 2423.00 Matches: 524 Percent Similarity: 41.14% Conservative: 5	Chromosome 17q21-q22.	POPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVPV"  old_sequence 1701. 1719  /citation=[1]  PASE COUNT 922 2 1382 2 880 +	
_				. •	·* / <sub>de</sub>	•		•							•													-	-	. :		_
Ş	₽ ₽	Qy	B 6	₽ B	γo	ş .Ş	DЬ	Qy	Db	γQ	Db	γΩ	рь	Qy	Db	Qγ	DЬ	Qy	Db	Qy	Db	ογ	Db :	0	문 5	0ν	당 :	ογ	Qу	Db 5	da da	
349	45 CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAGTTTCCAGAT	9	1885 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACOTGTTTTGGA	9	329 329 329 329	CACTGCTGGGGTCCAGGGCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGGCCAG	329 329	1645 CGGCCAGAGGACGAGTGTGGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG 1704	329 329	1585 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1644	329 329	1525 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC 1584	329 329	1465 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGGCTGGGGCTGCGCTCACTG 1524	329 329	1405 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATTCTGCACAAT 1464	329 329	1345 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1404	329 329	GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG	329 329	GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG	329 329	GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT		AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT	9	318 CysProTyrAsnTyrLeuSerThrAspValGlySer	TITGAGTCCATGCCCAATCCCGAGGGCCGGTATACATTCGGCGCCCAGCTGTGACTGCC		

3144	3085 ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	밁
329	329	Qy
3084	3025 TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC	ф
329	329	Qy
3024	2965 GAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT	DЪ
329	329	Qy
2964	2905 GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG	В
329	329	οy
2904	2845 TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGGAGCTGATGACTTTT ;	В
329	329	Qy
2844	2785 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG	В
329	329	γo
2784	2725 GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT	Db
329	329	Qy
2724	2665 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT	В
329	329	Qy
2664	2605 TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT	Вb
329	329	Qy
2604	2545 CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAAACCGCGGACGCCTGGGC	Db
329	329	γo
2544	2485 TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA :	망
329	329	οy
2484	2425 ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC ;	Ф
329	329	γo
2424	2365 TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC	ф
329	329	Qy
2364	2305 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC	Db
329	329	δō
2304	2245 CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG	망
329	329	δ
2244	2185 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	В
329	329	Qy
2184	2125 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG	Db
329	329	Qy
2124	2065 GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTCTCTGCGGTG	Ъ
329	329	Qy
2064	2005 GAGGAGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT :	Вþ

RESULY AX060 LOCUS DEFIN ACCES: VERSIV KEYWO) SOURC: ORG REFERI AUTITITITITITITITITITITITITITITITITITITI	Оу	Оy	рь	ob dy	Qy Db	Qy	Оy	Qу	Дy	oy Db		Qy Db	Db	Qy	DЪ	 Qy
SULT 11 D60703 US US FINITION	551 3919	531 3865	511 3805	491 3745	471 3685	451 3625	431 3565	411 3505	391 3445	371 3385	351 3325	331 3265	3205	330	3145	329
AX060703  Sequence 1 from Patent WO0100244.  AX060703  AX060703.1 GI:12406100  Synthetic construct Synthetic construct artificial sequences. 1 (bases 1 to 9274) Erickson, S. and Schwall, R. Methods of treatment using anti-erbb antibody-maytansinoid conjugates Patent: WO 0100244-A. 1 04-JAN-2001; Genentech, Inc. (US)	AlaargSerProSerPro 556	GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro 5	AsnLeuTyrTyrTypAspGlnAspbroProGluArgGlyAlaProProSerThrPheLys 5	ProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAsp 5	GlyvalvalLysAspvalPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr 4	AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLysAsn 4	TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 4	ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 4	GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal 4	GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeu 3	LeuThrLeuGlyLeuGluProSerGluGluAlaProArgSerProLeuAlaProSer 3	AlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGlyGlyGlyGlyAsp 3	GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC 3		TGGTG 3	3
AN-2001		50 918	30 864	100	90 744	70 684	50 · 624	30 564	10. 504	90	384	50 · 324	264	30	204	29

Oy 222 argCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThrValCysAlaGly 241	QY 122 ArgGLyThrGLILEUPHGLIASpASnTyrAlaLeuAlaValLeuAspAsnGLyAspPro 141  Db 2037 CGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGACCATGGAGACCCG 2096  Qy 142 LeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArgGluLeuGlnLeu 161	62 LeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGlyAsnLeuGluLeu 81	2 ArgAlaAlaProLeuLeuLeuAlaArgA	FEATURES  Source  1. 9274  /organism="synthetic construct" //ob_="rector sequence" BASE COUNT  2152 a 2538 c 2489 g 2095 t ORIGIN  Alignment Scores: Pred. No.: 2422.00 Percent Similarity: 41.12% Best Local Similarity: 40.43% Query Match: DB:  US-09-821-883-2 (1-690) x AX060703 (1-9274)
		. A.		
0 pb		. QV QV QV QV QV QV QV QV QV QV QV QV QV Q	. OA OA OA	0y 0
341 32 347 32 353	b 3117 y 329 y 329 b 3177 b 3237 y 329 y 329 y 329 y 329 y 329 y 329	y 329 b 2937 y 329 y 329 y 329 b 2997 b 3057 b 3057	y 329 b 2757 y 329 y 329 b 2817 y 329	y 282 b 2517 y 302 y 302 b 2577 b 2577 y 322 b 2637 y 329
TGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGACCCGAGGCTGAC  CAGTGTGTGGGCCTGTGCCCACTATAAGGACCCTCCCTTCTGCGTGGCCCGGCTGCCCCAGC  GGTGTGAAACCTGACCTCTCCTACATGCCCCATCTGGAAGTTTCCAGATGAGGAGGGCGCA	AGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCACACGGTGCCCTGG 3176	CTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGCCTGCCT	TATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGTGCCAATATCCAG 2816	IleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThrPheGluSerMet 301

			15 4557
•	329		Оу 329
:	C 4556	TACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGGGAGCGGCTGCCC	Db 4497
	329		Оу 329
	T 4496	AGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTTGGGGCCAAACCT	Db 4437
	329		Оу 329
	1G 4436	AAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGGTTCACCCACC	Db 4377
	329		Оу 329
	3C 4376	GACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGC	рь 4317
	329		Оу 329
	CA 4316	CACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACA	Db 4257
	329		Оу 329
•	TA 4256	CTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTA	Db 4197
	329		Оу 329
	rG 4196	TATEGCTECCTCTTAGACCATETCCGGGAAAACCGCGGACGCCTGGGCTCCCAGGACCTG	Db 4137
	329		Оу 329
	C 4136	$^{\prime}$ TCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACACAGCTTATGCCC	Db 4077
	329		Оу 329
	rc 4076	GCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGCTCCCCATATGTC	Db 4017
_	329		Оу 329
_	AA 4016	GGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAACACATCCCCCAAA	Db 3957
	329		Оу 329
	AT 3956	GTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCCATCTGGATCCCTGAT	Db 3897
	329		Оу 329
-	∿G 3896	AGCGGAGCGATGCCCAACCAGGCGCAGATGCGGGATCCTGAAAGAGAGACGGAGCTGAGGAAG	Db 3837
	329		Оу 329
•	TT 3836	CGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAGCCGCTGACACCT	Db 3777
	329		Оу 329
:	IC 3776	CTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGGCAGCAGAAGATC	Db 3717
	329		Оу 329
	rg 3716	CCCGCCGAGCAGAGAGCCAGCCCTCTGACGTCCATCGTCTCTGCGGTGGTTGGCATTCTG	Db 3657
	329		Оу 329
	3C 3656	TGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGATGACAAGGGCTGC	Db 3597
	329		Оу 329

ORGE ORGE		Qy 5 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Qy 4 4 Db 4	Db 4  Qy  Db 4  Qy  Qy  Qy  Qy  Qy  Qy  Qy  Db 4
511 575 562 12 19 10N 10N N	277 495 337 515 515 535 457	415 6097 435 435 455 455 475	355 1917 375 375 1977 1977	329 329 1737 1737 330 335
CCGCAGAAGCCCTGATGTGTCCTCAGGGAGCAGGGAAGGCGGCCTCTG LeuSerArgAspThr 580	CGTTTTTGCCTTTGGGGGTGCCGGTGGAGAACCCCGAGTACTTGACACCCCAGGGAGGA  allaproGlnproHisproProProProAlapheSerproAlapheAspAsnLeuTyrTyr	UThraspGlyTyrValAlaProLeuThrCysSerProGlnProGluTyrValAsnGln		CCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG
5561 AUG-2000	5336 53456 5510	5156 5156 454 5216 5276 5276	374 4976 394 5036 414	4736 329 4796 334 4856 354 4916

Qy 258 GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe 277	829	238 ValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGlu	Db 769 TGTAAGGGCTCCCGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGCCTGACGCGCACT 828	Oy 218 CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr 237		98 LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet 21	649 CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGGACAACCAG 708	178 ProGlateurverlanderphriloteurratverentlebbatetversenden 10	1	158 ClintonClatonAracortonThrClintlotonTucCluClintolTocThrasor	138 AsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGlyGlyLeuArg 15	469 CTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGAC 528	118 LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp 1	Db 409 GAGGTGCAGGGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCACTGCAGAGG 468	98 GluValGlnGlyTyrValLeuIleAlaHisAsnGlnValArgGlnValProLeuGlnArg 1	349 AACCTGGAACTCACCTACCTGCCCACCAATGCCAGCCTGTCCTTCCT	78 AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln 97	269 CULDAGACULTUGALATGUTUCGULACUTUTACCAGGGUTUGCCAGGTGGTGCAGGGA	58 ProGluThrH1sLeuAspMetLeuArgH1sLeuTyrGlnGlyCysGlnValValGlnGly 77	229	38 GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer 57	1/8 GAGCTGGCGTTGTGCCGCTGGGGGCTCCTCCTCGCCCTCTTGCCCCCC	16 PREFERENCE OF THE PROPERTY	10 0757 000750 0000750 00000000	The standard forestable standard standa	2 Argalsalsoroloutoutoutoutoutoutoutoutoutoutoutoutouto	* \$5000050 /1-/473\	64.67% Indels:	41.06% Conservati	Length:		BASE COUNT 902 a 1383 c 1329 g 859 t	source	JOURNAL Patent: US 5968748-A 1 19-OCT-1999; FRATTURES TOCATION ON A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	l (bases 1 to 4473) Bennett, C. Frank., Lipton, A. and Witters, L.M.
_	Ωγ	- G	מי			Qy	dd	Qy	Db	Qy	b	νον	Db	0 <sub>V</sub>	Db .	Оу	da	Qy	. <u> </u>	Qy	Db	 0y	Db	Qγ	Db	Qy	da da	Qy	Db	γο	dd	Qy	ф	Qy	
	329	1909	905 681	329	. 17	7 329	o 1729 C	329 -	o 1669 C	329 -	o 1609 A	329 -	15	329	_	329 -	) 1429 C	7 329 -		329 -	13	329 -	) 1249 G	329 -	) 1189 G	329 -	1129 A	329 -	1069	/ 318 C	1009 T	, 298 PI	949	278 As	889 C1

	329	329	Qγ	
	1968	1909 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	Db	
	329	329	Qy	
	1908	1849 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA	₽.	
	329	329	Qy	
	1848	1789 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTGAATGCCAGG	DЪ	•
	329	329	Qy	
•	1788	1729 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG	В	
£	329	329	Qy	
	1728	1669 CGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGCGCCCGAGGG	DЬ	
	329	329	Qy	
	1668	1609 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC	Db	
	329	329	Qy	•
	1608	1549 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC	ДЪ	
	329	329	Оу	
	1548	1489 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	DЬ	
	329	329	Qy	
	14.88	1429 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT	ф	
-	329	329	Qy	
	1428	1369 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC	Db	•
	329	329	Qy	
	1368	1309 GAGAGCTTTGATGGGGACCCCAGCCTCCAACACTGCCCCGCTCCCAGCCAG	Вb	
	329	329	Qγ	
•	1308	1249 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG	Ъ	
	329	329	Qy	
	1248	1189 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCAGTTACCAGT	Db	
	329	329	Qy	
	1188	1129 AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT:	рь	
	329	329	Qy	
•	1128	TGCACCCTCGTCTGCCCCCCTGCAC	Db	
	329	318 CysProTyrAsnTyrLeuSerThrAspValGlySer	Qy	<i>:</i>
···	317. 1068	298 PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla:	Qу	:
	297 1008 <sub>.</sub>	278 ASNH1SSETGlyIleCySGluLeuHiSCySPTOAlaLeuValThrTyrASnThrAspThr :	Оy	
	948		Db	
				•

8	1969	CGCTGCCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCCATCTGGAAGTTTCCCAGAT 2	2028
Ş	329		329
B	. 2029	GAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT	2088
ν	329	3	329
8	2089	GACAAGGGCTGCCCCGCCGAGCAGAGAGGCCAGCCCTCTGACGTCCATCATCTCTGCGGTG	2148
Ş	329		329
8	2149	GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG 2	2208
ν	329	3	329
B	2209	CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	2268
¥	329	3	329
용	2269	CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACACG	2328
¥	329	3	329
ğ	2329	GAGCTGAGGAAGGTGAAGGTGCTTGGGATCTGGCGCTTTTTGGCACAGTCTACAAGGGCATC 2	2388
Ϋ́	329		329
ğ	2389	TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC 2	2448
Σ	329	3	329
g	2449	ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC 2	2508
Ą	329	3	329
В	2509	TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA 2	2568
Ϋ́	329	3	329
8	2569	CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC 2	2628
Ą	329		329
B	2629	TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 2	2688
Ϋ́	329	3	329
8	2689	GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 2	2748
ž	329	3	329
8	2749	GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT 2	2808
Ą	329	3	329
မွ	2809	GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 2	2868
Ϋ́	329	3	329
õ	2869	TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT 2	2928
ž	329	3	329
۶	2929	GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG 2	2988
¥	329	3	329
ĕ	2989	GAGCGGCTGCCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 3	3048
Ϋ́	329	3	329
ğ	3049	TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC 3	3108

RESULT 13 AR167390 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISH REFERENCE AUTHORS	Qy Db 3	Qy Db 3	. Db 3	. pp 3	Qу Db 3	Qy Db 3	Qy .	Qy Db 3	Qy Db 3	Qy Db 3	Qy Db 3	Qy Db 3	Qy Db 3	Db 3	Qy	Db 3	Qy	
T 13 T 13 T 190 C C C C C C C C C C C C C C C C C C C	551 <i>i</i>	531 ( 889 (	511 <i>i</i> 829 <i>i</i>	491 I 769 (	471 ( 709 (	451 Z 649 (	431 7	411   529 (	391 (	371 (	351 J	331 · / 289 (	330	169 (	329	109	329	
AR167390 AR167390 AR167390 AR167390 AR167390 AR167390.1 GI:17903168  Unknown. Unknown. Unclassified. 1 (bases 1 to 4473) Kipps, T. J. and Wu, Y.	AlaArgSerProSerPro 556                 ACCAGAAGGCCAAGTCCG 3960	GlyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValProAlaAlaAlaPro 	ASnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys 	ProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAsp 	G1yVa1Va1LysAspVa1PheAlaPheG1yG1yAlaVa1G1uAsnProG1uŤyrLeuThr 	AlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLySThrLeuSerProGlyLySASn 	TyrValAsnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro	ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 	GlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAspProThrVal	GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLySGlyLeu 	LeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer 	AlaGlyGlyMetValHisHisArgHisArgSerSerThrArgSerGlyGlyGlyAsp 	GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC	CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGACCTGGTG		ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG		
DEC-2001		550 · 3942	530 : 3888 ·	510 3828	490 3768	470 3708	450 3648	430 . 3588	3528	390 3468	370 3408	350 3348	330 3288	3228	329	3168	329	

Oy 258 GlnCysAlaAlaGlyCysThrGlyProLysHisSerAspCysLeuAlaCysLeuHisPhe 277	829 GTCTGTGCCGGTGGCTGTGCCCGCTGCAAGGGGCCACTGCCCACTGACTG	238 ValCysAlaGlyGlyCysAlaArgCysLysGlyProLeuProThrAspCysCysHisGlu 2	Qy 218 CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr 237		198 LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCvsHisProCvsSerProMet	Qy 178 ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln 197	589 GAGCTGCAGCACACAGAGATCTTGAAAGGGAGGGTCTTGATCCAGCGGAAC	Qy 158 GluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsn 177	The state of the s	469 CTGCGGATTGTGCGAGGCCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGAC	Qy 118 LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp 137	409 GAGGTGCAGGGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCACTGCAGAGG	98 GluValGlnGlvTvrValLeuIlealaHisAsnGlnValArgGlnValProLeuGlnArg	Oy         78 AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln         97	N	Qy 58 ProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnValValGlnGly 77	Qy 38 GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer 57	178 GAGCTGGGCGCTTGTGCCGCTGGGGGCTCCTCGCCCTCTTGCCCCCC	18 PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLvsGluLeuAlaArg	Qy 2 ArgAlaAlaProLeuLeuAlaArgAlaAlaSexLeuSexLeuGly 17	US-09-821-883-2 (1-690) x AR167390 (1-4473)	64.67% Indels: 6 Gaps:	: 2418.00 it Similarity: 41.06% Cocal Similarity: 40.67%	Scores: 2 256-80 Tenath:	BASE COUNT 902 a 1383 c 1329 g 859 t ORIGIN	ő	TITLE Vaccines with enhanced intracellular processing JOURNAL Patent: US 6287569-A 26 11-SEP-2001;
		٠.													·· :		•			-				÷ .	·		
Db	oy b	Qy	Дb	Оу <b>р</b> ь	Qy	Db :	Q D	. Qy	Дb	Qy Db	Ş	g Dp	Qy	DЬ	.: Db	. Oy	Db	0 <del>0</del> 0 <del>0</del>	γQ	Db &	Q 5	P &	da <b>4</b> 9	Q	Qy	Db	0y
69	1909 CCGGAGGCTGACCAGTG	329	1849 CACTGTTTGCCGTGCCA	1789 GAGTGCGTGGAGGAATG	329	1729 CACTGCTGGGGTCCAGG	329329	329	1609 ACGGTGCCCTGGGACCA	1549 AGGGAACTGGGCAGTGG	9	1489 GGCGCCTACTCGCTGAC	329	1429 CTGCCTGACCTCAGCGT	1369 GTGTTTGAGACTCTGGA	329	1309 GAGAGCTTTGATGGGGA	1249 GCCAATATCCAGGAGTT	329	1189 GCCCGAGTGTGCTATGG	602	329	1069 TGTCCCTACAACTACCT	φ <b>α</b>	298 PheGluSerMetProAs	949 AACCACAGTGGCATCTG	278 Asn
CGCTGCCCCAGCGGTGT									G	୍ଦ		ထ		Ö		!!	7	: ₹	:	႘	: 2		Q - 7	ତ ଦ	_ G	()—	· TT

Оу 329 329	
Db 1909 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT	
Qy 329 329	
Db 1849 CACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1908	
ОУ 329 329	
Db 1789 GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG 1848	•
ОУ 329 329	
Db 1729 CACTGCTGGGGTCCAGGGCCCACCCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1788	
ду 329 329	
Db 1669 CGGCCAGAGGACGAGTGTGTGGGGCGAGGGCCTGGCCACCAGCTGTGCGCCCGAGGG 1728	
Qy 329 329	
Db 1609 ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC 1668	
Qy 329 329	
Db 1549 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC 1608	
Оу 329 329	
Db 1489 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	
ОУ 329 329	
Db 1429 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT 1488"	
ОУ 329 329	
Db 1369 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1428	•
ОУ 329 329	
Db 1309 GAGAGCTTTGATGGGGACCCCAGCCTCCAACACTGCCCCGCTCCAGCCAG	
Оу 329 329	
Db 1249 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 1308	
Qy 329 329	
Db 1189 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCCAGTTACCCAGT 1248	
Оу 329 329	
Db 1129 AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT 1188	
ОУ 329 329	
Db 1069 TGTCCCTACAACTACCTTTCTACGGACGTGGGATCCTGCACCCTCGTCTGCCCCCTGCAC 1128	
Qy 318 CysproTyrAsnTyrLeuSerThrAspValGlySer 329	
Qy 298 PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla 317	
949 AAUCACAGTGGCATCTGTGAGCTGCACTGCCCAGCCCTGGTCACCTACAACACACAC	
278 AsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThr 297	

	329		329	Ş
	3108	TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC	3049	В
	329		329	γ
	3048	GAGCGGCTGCCCAGCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT	2989	DЬ
	329		329	8
	2988	GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG	2929	Ф
:	329		329	δĀ
	2928	TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT	2869	В
	329		329	Qy
	2868	GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG	2809	В
	329		329	δ
	2808	GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT	2749	В
	329		329	δ
	2748	GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCCAACCAT	2689	망
•	329		329	οy
	2688	TCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT	2629	В
:	329		329	Ş
	2628	CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC	2569	В
	329		329	Ş
•	2568	TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA	2509	Вb
	329		329	Ŷ
	2508	ACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCTGGTGTGGGC	2449	₽
	329		329	δ
	2448	TGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTGAGGGAAAAC	2389	g
	329		329	δ
	2388	GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC	2329	밁
	329		329	Ş
	2328	CCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTGAAAGAGACG	2269	В
	329		329	γQ
٠.	2268	CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG	2209	В
	329		329	Ş
•	2208	GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG	2149	В
	329		329	Ş
	2148	GACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCATCTCTGCGGTG	2089	밁
	329		329	Ş
	2088	GAGGAGGGCGCATGCCAGCCTTGCCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT	2029	В
	329		329	õ

SOURC ORG REFER	RESUL HSERB TLOCUS DEFIN ACCES VERSI	Db	Db	Qy	Оy	Db	Qy	ДЬ	DЬ	Qy	Оy	DЪ	Qy	Qy db	Оy	DЪ	Qγ	Db	Ъ	Qy	Дb	Qy	Db
CE GANISM RENCE	SULT 14 ERB2R CUS FINITION CESSION RSION RSION YWORDS	3943	89	531	511 3829	3769	491	471 3709	3649	451	431 3589	N	411	391 3469	371 3409	3349	351	331 3289	3229	330	3169	329	3109
glycoprotein; growth factor receptor; kinase; neu cellul oncogene; transmembrane protein; tyrosine kinase. Homo sapiens. Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Hom (bases 1 to 4473)	HSERB2R Human c-erb-B-2 mRNA. 4473 bp mRNA linear PRJ Human G-erb-B-2 mRNA. X03363 X03363.1 GI:31197 cell surface 9lycoprotein; cellular oncogene; erB-2 cel	ALBAGSETPYOSETPYO 336                  ACCAGAAGGCCAAGTCCG 3960	ACACCTACGGCAGAGAAC	lyThrProThrAlaGluAsnProGluTyrLeuGlyLeuAspValPr	ASDLEUTYTTYTTPASPGLDASPPTOPTOGLUATGGLYALAPTOPTOSETTHTPHELYS 530	CCCAGGGAGGAGCTGCCCTCAGCCCCACCCTCCTCCTCCTTCAGCCCAGCCTTCGAC 3828	roGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAla	GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrZeuThr 490	GAAGAAT 3708	aAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerProGlyLys	TyrValasnGlnProAspValArgProGlnProProSerProArgGluGlyProLeuPro 450	CCTGCCTCTGAGACTGATGCTACGTTGCCCCCCTGACCTGCAGCCCCAGCCTGAA	roLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnPr	GlnSerLeuDroThrHisaspProSerProLeuGlnArgTyrSerGluAspProThrVal 410	GluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAlaLysGlyLeu 390 	TIGACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTGGCACCCTCC 3408	${\tt ThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeuAlaProSer}$	AlaGlyGlyMetValH1sH1sArgH1sArgSerSerSerThrArgSerGlyGlyGlyAsp 350	ACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC 32	y 330	CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTG 3228	329	ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG

```
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
 misc_feature
                                     misc_feature
                                                                                           misc_feature
                                                                                                                               misc_feature
                                                                                                                                                                 misc_feature
                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                     mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                       sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yamamoto,T., Ikawa,S., Akiyama,T., Semba,K., Nomura,N., Miyajima,N., Saito,T. and Toyoshima,K.

Similarity of protein encoded by the human c-erb-B-2 gene epidermal growth factor receptor wature 319 (6050), 230-234 (1986)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G to A polymorphism at amino erbB-2/HER2 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JUU39/

2 (bases 1 to 4473)

Papewalis,J., Nikitin,A.Yu. and Rajewsky,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature 319
86118663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   681519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              c-erb-B-2 protein shows similarity to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Acids Res. 19
2446. .2454
/note="pot.
4455. .4460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MLRHLYOGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIV
RGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGSVLLQRNQ
LCYQDTILMGGNLHKOLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRF
VCAGGCARCKGPLPTDCNGCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNT
DTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPLHNQEVTAEDGTQRCEKC
SKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPL
                                                                                                                                                                                                                                         /note="
949..9
                                                                                                                                                                                                                                                                                                                                                                                                                                                         FCPDPAPGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDG
DLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVR
PQPPSPREGPLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKSP
NHVKITDFGLARLDDTDETEYHADGGKVPIKWALESILRRRETHQSDVWSYGVTVWE
LMTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYNIHVMCKMYIDSECRPREFEL
VSEFSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QPEQLOVFETLEETTGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLILQGLGI
SWLGLESLRELGSGLALIHHNYHLCFVHTVPMQDLFRNPHQHCALLHTANRPEDECVGEG
LACHQLCARGHCWGFGPFQCVNCSQFDLRGQECVEECRYLQGLPREYVNARHCLPCHPE
CQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKFPDEEGACQ
PCPINCTHSCYDLDDXGCPAEQRASPLTSIISAVGILLVVLGSGAFGTVKGRIK
RKYTWARKLLQETELYBPLTPSGAMSPLTSIISAVGILLVVLGSGAFTVVKGUKI
PKGENYKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQLVT
                                                                                                                                                                                                   /note-"
1762. .
                                                                                                                                                                                                                                                                                                                                                                                                                         PQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVPV"
175. 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /protein_id="CAA27060.1"
/db_xref="GI:31198"
                                                                                                                                                                   /note="pot. glycosylation site"
1885. .1893
                                                                                                                                                                                                                                                                                                                                                                                                      /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="c-erb-B-2 precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                /note-"pot.
                                                                                                                                                                                                                                                                                          /note="pot.
                                                                                                                                                                                                                                                                                                                            note="pot. glycosylation
                                                                                                                                                                                                                                                                                                                                                                /product="put. c-erb-B-2 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        translation-"MELAALCRWGLLLALLPPGAASTQVCTGTDMKLRLPASPETHLD/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     db_xref="taxon:9606"
                                                                         'note="aa 727-986,
                                                                                                            'note="pot.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'organism-"Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          train-"cell line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _xref="SWISS-PROT:P04626"
                                                                                                                                                                                                                                                                                                                                                                                       .3939
                                                                                                                                                                                                                                                                                                                                                     . 384
                                                                                                                                . 2067
                                                                                                                                                                                                                                                      pot. glycosylation site"
                                                                                                                                                                                                                                                                                                                                                                                                        putative'
                                                                                                          glycosylation site"
                                                                                                                                              glycosylation site"
                                                                                                                                                                                                                    glycosylation site"
                                                                                                                                                                                                                                                                                        glycosylation site"
                  glycosylation site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (19),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5452 (1991)
                                                                        seq.
                                                                      homologous to
                                                                                                                                                                                                                                                                                                                              site'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         γ, M. I
                                                                                                                                                                                                                                                                                                                                                                (aa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of the
                                                                                                                                                                                                                                                                                                                                                                    1-1234)"
                                                                      EGF receptor kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                  Ş
                                                                                                            밁
                                                                                                                                            ş
                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
DB:
                                     밁
                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-821-883-2 (1-690) x HSERB2R (1-4473)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polyA_site
                                                                                                                                                                                                                                                                                                                              649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            529
 278 AsnHisSerGlyIleCysGluLeuHisCysProAlaLeuValThrTyrAsnThrAspThr
                                       688
                                                                      258
                                                                                                            829
                                                                                                                                                238
                                                                                                                                                                                  769
                                                                                                                                                                                                                    218
                                                                                                                                                                                                                                                        709
                                                                                                                                                                                                                                                                                            198
                                                                                                                                                                                                                                                                                                                                                                  178
                                                                                                                                                                                                                                                                                                                                                                                                      589
                                                                                                                                                                                                                                                                                                                                                                                                                                        158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           229 GGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTCCCTGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   178 GAGCTGGCGGCCTTGTGCCGCTGG; ------GGGCTCCTCCTCGCCCCCTCTTGCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118 CGCGCCTTCCCAGCCGGGTCCAGCCGGAGCCATGGGGCCGGAGCCGCAGTGAGCACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18 PheLeuPheLeuLeuPhePheTrpLeuAspArgSerValLeuAlaLysGluLeuAlaArg 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 ArgAlaAlaProLeuLeuLeuAlaArgAla------AlaSerLeuSerLeuGly 17
                                    CysLysGlySerArgCysTrpGlyGluSerSerGluAspCysGlnSerLeuThrArgThr 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LeuArgIleValArgGlyThrGlnLeuPheGluAspAsnTyrAlaLeuAlaValLeuAsp 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGCTCTCACACTGATAGACACCAACCGCTCTCGGGCCTGCCACCCCTGTTCTCCGATG
                                                                                                                                                                                                                                                                           LeuAlaLeuThrLeuIleAspThrAsnArgSerArgAlaCysHisProCysSerProMet
                                                                                                                                                                                                                                                                                                                                CCCCAGCTCTGCTACCAGGACACGATTTTGTGGAAGGACATCTTCCACAAGAACAACCAG
                                                                                                                                                                                                                                                                                                                                               ProGlnLeuCysTyrGlnAspThrIleLeuTrpLysAspIlePheHisLysAsnAsnGln 197
                                                                                                                                                                                                                                                                                                                                                                                                      GAGCTGCAGCTTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                     GluLeuGlnLeuArgSerLeuThrGluIleLeuLysGlyGlyValLeuIleGlnArgAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCGGATTGTGCGAGGCACCCAGCTCTTTGAGGACAACTATGCCCTGGCCGTGCTAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGTGCAGGGCTACGTGCTCATCGCTCACAACCAAGTGAGGCAGGTCCCACTGCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GluValGlnGlyTyrValLeuIleAlaHiSAsnGlnValArgGlnValProLeuGlnArg 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AsnLeuGluLeuThrTyrLeuProThrAsnAlaSerLeuSerPheLeuGlnAspIleGln 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeuProAlaSer
                                                                                                                                                                                  TGTAAGGGCTCCCGCTGCTGGGGAGAGAGTTCTGAGGATTGTCAGAGCCTGACGCGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 902 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="put. polyA signal" 4473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="polyA site"
1383 c 1329 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.25e-80
2418.00
41.06%
40.67%
64.67%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   859 t
```

348

288 57 228 177

648

177

588

157

528

468

408

217 708

768

3109 ATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGCCCAGCCAG	Db	329
329 329	Qy	
3049 TGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAATTCTCCCGC 3108	Db	™₹₽₹Ċ₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽
329 329	Оу	
2989 GAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATGGTCAAATGT 3048	Db	1909 CCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCTCCCT
	. Oy	329 329
GGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTGGAAAAGGGG	ДЪ	1849 CACTETTTGCCGTGCCACCCTGAGTGTCAGCCCCAGAATGGCTCAGTGACCTGTTTTGGA 1908
329 329	Qy	
2869 TTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGACTGTGTGGGAGCTGATGACTTTT 2928	Db	GAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCAGGGAGTATGTGAATGCCAGG
329 329 .	Oy	
2809 GCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTCCGCCGGCGG 2868	Db	1729 CACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTTCGGGGCCAG 1788
329 329	Qy	
2749 GTCAAAATTACAGACTTCGGGCTGGCTCGGCTGCTGGACATTGACGAGACAGAGTACCAT 2808	Db	CGGCCAGAGGACGACTGTGTGGGCGAGGGCCTGGCCTGCCCACCAGCTGTCTCCCCCCGAGCG
329 329	. Qy	
2689 GTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCAT 2748	Db	ACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCACACTGCCAAC
329 329	Qy	
2629 TCCCAGGACCTGCTGAACTGGTGTATGCCAGATTGCCAAGGGGATGAGCTACCTGGAGGAT 2688	Db	1549 AGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCCACCTCTGCTTCGTGCAC 1608
329	Qy	329 329
CAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGGACGCCTGGGC	Db	1489 GGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG
	Qy	329 329
TCCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAGCTGGTGACA	Db	1429 CTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGACGAATTCTGCACAAT 1488
		329 329
CIVETA COCCOCRETION CONTROL HERVER HAVE A LITERION OF HIS CONTROL CONT	> 6	1369 GTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGGCCGGACAGC 1428
ACCUPATA COLOCALA CA	<u> </u>	329 329
TOWN TO THE TOWN T	Ov 8	1309 GAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG
THE A MENOTONIA PROPERTY OF THE COLOURS OF THE COLOURS OF THE STATE OF THE STATE OF THE STATE OF THE COLOURS OF	·	329 329
	Qy :	1249 GCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCCTGGCATTTCTGCCG 1308
2329 GAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTGGCACAGTCTACAAGGGCATC 2388	Db 43	329 329
		1189 GCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGGCAGTTACCAGT 1248
**  CCGCTGACACTAGCGGAGGGGATGCGAACCGAGACGAGA	da J	329 329
329 329	Qy	1129 AACCAAGAGGTGACAGCAGAGGATGGAACACAGCGGTGTGAGAAGTGCAGCAAGCCCTGT 1188
2209 CAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAGCTGGTGGAG 2268	מם י	
329 329	Qy	**************************************
2149 GTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATCAAGCGACGG 2208	Db	310
329 329	Qy	
GACAAGGGCTGCCCCGCCGAGCAGAGAGCCAGCCCTCTGACGTCCATCATCTCTGCGGTG	Db	298 PheGluSerMetProAsnProGluGlyArgTyrThrPheGlyAlaSerCysValThrAla 317
	Qy	
2029 GAGGAGGGCGCATGCCAGCCTTGCCCCCATCAACTGCACCCACTCCTGTGTGGACCTGGAT 2088	dd	

Ş

á

망

δ В

밁

밁

3768 510 0 2 727

```
REFERENCE
AUTHORS
                                                      LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                           RESULT 15
AX060704
                 TITLE
 JOURNAL
                                                                                                                                   3943
                                                                                                                                                                 3889
                                                                                                                                                                                               3829
                                                                                                                                                                                                                              3769
                                                                                                                                                                                                                                                            3709
                                                                                                                                                                                                                                                                                          3649
                                                                                                                                                                                                                                                                                                                        3589
                                                                                                                                                                                                                                                                                                                                                      3529
                                                                                                                                                                                                                                                                                                                                                                                   3469
                                                                                                                                                                                                                                                                                                                                                                                                                 3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                3349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3169
                                                                                                                                                                                                                                                                                                                                      431
                                                                                                                                                                                                                                                                                                                                                                    411
                                                                                                                                                                                                                                                                                                                                                                                                                                371
                                                                                                                                                                                                                                             491
                                                                                                                                                                                                                                                                           471
                                                                                                                                                                                                                                                                                                        451
                                                                                                                                                                                                                                                                                                                                                                                                  391
                                                                                                                                                                                                                                                                                                                                                                                                                                                               351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             331
                                                                                                                                                  551
                                                                                                                                                                               531
                                                                                                                                                                                                              511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                              AlaArgSerProSerPro
                                                                                                                                                                GlyValValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGluTyrLeuThr 490
                                                                                                                                                                                                                                                                                        ProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerProGlnProGlu 430
                                                                                                                                                                                                                                                                                                                                                                                 GlnSerLeuProThrH1sAspProSerProLeuGlnArgTyrSerGluAspProThrVal
                                                                                                                                                                                                                                                                                                                                                                                                               AsnLeuTyrTyrTrpAspGlnAspProProGluArgGlyAlaProProSerThrPheLys 530
                                                                                                                                                                                                                                     ProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerProAlaPheAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCTGCCCCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGGGGACCTGGTG
                                                                                                                                                                                               CCCCAGGGAGGAGCTGCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCAGCCTTCGAC
                                                                                                                                                                                                                                                           GGGGTCGTCAAAGACGTTTTTGCCTTTGGGGGGTGCCGTGGAGAACCCCGAGTACTTGACA
                                                                                                                                                                                                                                                                                                                                                    CCCCTGCCCTCTGAGACTGATGGCTACGTTGCCCCCCTGACCTGCAGCCCCCAGCCTGAA
Erickson,S. and Schwal
Methods of treatment u
conjugates
Patent: WO 0100244-A 2
                              Homo sapiens
Eukaryota; Metazoa; Cl
Mammalia; Eutheria; P:
1 (bases 1 to 3768)
                                                                            AX060704
Sequence 2
AX060704
AX060704.1
                                                               human
                                                                                            from
                                                                            GI:12406101
              1 Schwall,R.
atment using
                                                                                          3768 bp
Patent WO0100244.
                                                                                                                                                556
                                                                                                                                   3960
                                      Chordata;
Primates;
 N
 04-JAN-2001;
                anti-erbb
                                      Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                    DNA
                antibody-maytansinoid
                                                                        linear
                                       Euteleostomi;
Homo.
                                                                                                   PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLy
                                                                                                    22-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                  410
                                                                                                                                                                 3942
                                                                                                                                                                                                                                                                                         3708
                                                                                                                                                                                                                                                                                                                                                                                                                                               3408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3288
                                                                                                                                                                               550
                                                                                                                                                                                                                            3828
                                                                                                                                                                                                                                            510
                                                                                                                                                                                                                                                           3768
                                                                                                                                                                                                                                                                                                                       3648
                                                                                                                                                                                                                                                                                                                                                    3588
                                                                                                                                                                                                                                                                                                                                                                                   3528
                                                                                                                                                                                                                                                                                                                                                                                                                3468
                                                                                                                                                                                                                                                                                                                                                                                                                                390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3228
                                                                                                                                                                                              3888
                                                                                                                                                                                                                                                                                                                                     450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment
Pred. No.:
밁
          Š
                             망
                                          ρ
                                                            망
                                                                        δ
                                                                                          밁
                                                                                                       Qy
                                                                                                                         В
                                                                                                                                    Ş
                                                                                                                                                        멍
                                                                                                                                                                     δÃ
                                                                                                                                                                                      В
                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-821-883-2 (1-690) x AX060704
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
826
                                              275
                                                             706
                                                                                           646
                                                                                                                          586
                                                                                                                                                        526
                                                                                                                                                                                       466
                                                                                                                                                                                                      175
                                                                                                                                                                                                                     406
                                                                                                                                                                                                                                                   346
                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                                                                 286
                                                                                                                                                                                                                                                                                                115
                                                                                                                                                                                                                                                                                                              226
                295
                               766
                                                                            255
                                                                                                          235
                                                                                                                                       215
                                                                                                                                                                       195
                                                                                                                                                                                                                                    155
                                                                                                                                                                                                                                                                                                                                             166
                                                                                                                                                                                                                                                                                                                                                                           106
                                                                                                                                                                                                                                                                                                                              95
                                                                                                                                                                                                                                                                                                                                                            75
                                                                                                                                                                                                                                                                                                                                                                                         55
                                                                                                                                                                                                                                                                                                                                                                                                         46
                                                                                                                                                                                                                                                                                                                                                                                                                        35
                                                                                                                                                                                      ProAlaSerProGluThrHisLeuAspMetLeuArgHisLeuTyrGlnGlyCysGlnVal
                                                                                                                                                                                                                                                                                                                                                                                                                LeuAlaArgGlyAlaAlaSerThrGlnValCysThrGlyThrAspMetLysLeuArgLeu
||||
                             ValLeuAspAsnGlyAspProLeuAsnAsnThrThrProValThrGlyAlaSerProGly 154
                                                                                                                                                                                                                                                    GTGCTAGACAATGGAGACCCGCTGAACAATACCACCCCTGTCACAGGGGCCCTCCCCCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                         TTGCCCCCGGGAGCCGCGAGCACCCAAGTGTGCACCGGCACAGACATGAAGCTGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genentech, Inc. (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapie
/db_xref="taxon:9606"
1170 c 1121 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.59e-80
2410.50
41.16%
41.16%
64.47%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .3768
                                                                                                                                                                                                                                                                                                                                                                                                                                       (1-3768)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲
```

134

345

• ....

114

94

165 74 54

225

285

194

885 314 825 294 765 274 705 254 645 234 585 214 525 174

405

465

밁 õ 밁 Ş g δ 밁 Ş B Ş ₽ Ş 문 Q 밁 Q 밁 Ş B Ş 밁 Ş B οy 밁 S 밁 ð

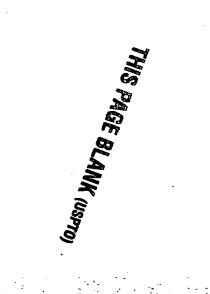
	1965	6 GACCTGGATGACAAGGGCTGCCCCGCCGAGCAGAGAGCCCAGCCCTCTGACGTCCATCGTC	b 1906
	329	9 , , , , , , , , , , , , , , , , , , ,	у 329
	1905	6 TTTCCAGATGAGGAGGGCGCATGCCAGCCTTGCCCCATCAACTGCACCCCACTCCTGTGTG	)b 1846
	329	9	у 329
	1845	6 TGCGTGGCCCGCTGCCCAGCGGTGTGAAACCTGACCTCTCCTACATGCCCATCTGGAAG	)b 178
	329	9	у 329
	1785	TGTTTTGGACCGGAGGCTGACCAGTGTGTGGCCTGTGCCCACTATAAGGACCCCTCCCT	)b 1726
	329	9	≀у 329
	1725	6 AATGCCAGGCACTGTTTGCCGTGCCACCCTGAGTGTCAGCCCCCAGAATGGCTCAGTGACC	)b 166
	329	9	у 329
	1665	6 CGGGGCCAGGAGTGCGTGGAGGAATGCCGAGTACTGCAGGGGCTCCCCCAGGGAGTATGTG	ъ 1606
	329	9	)y 329
	1605	6 GCCCGAGGGCACTGCTGGGGTCCAGGGCCCACCCAGTGTGTCAACTGCAGCCAGTTCCTT	)b 154
	329	9	у 329
	1545	6 ACTGCCAACCGGCCAGAGGACGAGTGTGTGGGCGAGGGCCTGGCCTGCCACCAGCTGTGC	)b 148
•	329	9	)у 32
	1485	6 TTCGTGCACACGGTGCCCTGGGACCAGCTCTTTCGGAACCCGCACCAAGCTCTGCTCCAC	)b 142
	329		)у 32
	1425	6 CGCTCACTGAGGGAACTGGGCAGTGGACTGGCCCTCATCCACCATAACACCCACC	)b 1366
	329	9	)у 329
	1365	6 CTGCACAATGGCGCCTACTCGCTGACCCTGCAAGGGCTGGGCATCAGCTGGCTG	)b 1306
	329		)у 329
	1305	6 CCGGACAGCCTGCCTGACCTCAGCGTCTTCCAGAACCTGCAAGTAATCCGGGGGACGAATT	)b 124
	329	9	)у 329
	1245	6 CAGCTCCAAGTGTTTGAGACTCTGGAAGAGATCACAGGTTACCTATACATCTCAGCATGG	)b 118
	329	9	)у 329
	1185	6 TTTCTGCCGGAGAGCTTTGATGGGGACCCAGCCTCCAACACTGCCCCGCTCCAGCCAG	ъ 112
	329	9	)y 329
	1125	GTTACCAGTGCCAATATCCAGGAGTTTGCTGGCTGCAAGAAGATCTTTGGGAGCC	ъ ъ 1066
	329	9	)y 329
	1065	6 AAGCCCTGTGCCCGAGTGTGCTATGGTCTGGGCATGGAGCACTTGCGAGAGGTGAGGGCA	ъ 1006
	329	9	)y 329
	1005	6 CCCCTGCACAACCAAGAGGTGACAGCAGAGGATGGAACACAGGGGTGTGAGAAGTGCAGC	)b 94
	329	9	у 329
	945	CTGTCCCTACAACTACCTTTCTACGGACGTGGGA	88 ď
	329	alThrAlaCysProTyrAsnTyrLeuSerThrAspValGlySe	)у 31

329 .		у 329	l oy
3045	CCAGCCAGTCCCTTGGACAGCACCTTCTACCGCTCACTGCTGGAGGACGATGACATGGGG	b 2986	מם
329		у 329	Qy
2985	TTCTCCCGCATGGCCAGGGACCCCCAGCGCTTTGTGGTCATCCAGAATGAGGACTTGGGC	b 2926	Db
329		у 329	Qy
2925	GTCAAATGTTGGATGATTGACTCTGAATGTCGGCCAAGATTCCGGGAGTTGGTGTCTGAA	b 2866	Дb
329		у 329	Qy
2865	GAAAAGGGGGGAGCGGCTGCCCCAGCCCCCCATCTGCACCATTGATGTCTACATGATCATG	b 2806	Db
329		у 329	у
2805	ATGACTTTTGGGGCCAAACCTTACGATGGGATCCCAGCCCGGGAGATCCCTGACCTGCTG	b 2746	Db
329		у 329	у
2745	CGCCGGCGGTTCACCCACCAGAGTGATGTGTGGGAGTTATGGTGTGACTGTGTGGGAGCTG	b 2686	Db
329		у 329	Qy
2685	GAGTACCATGCAGATGGGGGCAAGGTGCCCATCAAGTGGATGGCGCTGGAGTCCATTCTC	b 2626	ф
329		у 329	Qy
2625	CCCAACCATGTCAAAATTACAGACTTCGGGCTGGCTGGCT	b 2566	Db.
329		у 329	Qy
2565	CTGGAGGATGTGCGGCTCGTACACAGGGACTTGGCCGCTCGGAACGTGCTGGTCAAGAGT	b 2506	Db
329		у 329	Qy
2505	CGCCTGGGCTCCCAGGACCTGCTGAACTGGTGTATGCAGATTGCCAAGGGGATGAGCTAC	b 2446	фd
329		у 329	οу
2445	CTGGTGACACAGCTTATGCCCTATGGCTGCCTCTTAGACCATGTCCGGGAAAACCGCGGA	b 2386	ДĎ
329		у 329	νο
2385	GGTGTGGGCCTCCCATATGTCTCCCGCCTTCTGGGCATCTGCCTGACATCCACGGTGCAG	b 2326	da ,
329		у 329	Qy
2325	AGGGAAAACACATCCCCCAAAGCCAACAAAGAAATCTTAGACGAAGCATACGTGATGGCT	b 2266	Дb
329 .		у 329	Qy
2265	AAGGGCATCTGGATCCCTGATGGGGAGAATGTGAAAATTCCAGTGGCCATCAAAGTGTTG	b 2206	ממ
329		у 329	Qy
2205	AAAGAGACGGAGCTGAGGAAGGTGAAGGTGCTTGGATCTGGCGCTTTTTGGCACAGTCTAC	b 2146	طa
329		у 329	Оу
2145	CTGGTGGAGCCGCTGACACCTAGCGGAGCGATGCCCAACCAGGCGCAGATGCGGATCCTG	b 2086	מם
329		у 329	· Qy
2085	AAGCGACGGCAGCAGAAGATCCGGAAGTACACGATGCGGAGACTGCTGCAGGAAACGGAG	b 2026	dd
329		у 329	Оу
2025	TCTGCGGTGGTTGGCATTCTGCTGGTCGTGGTCTTGGGGGTGGTCTTTGGGATCCTCATC	b 1966	da
329		у 329	Qy

```
3286
    3706
                                                                                    3646
                                                                                                                                                                      3586
                                                                                                                                                                                                                                                        3526
                                                                                                                                                                                                                                                                                                                                                                                                                        3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3046
                                                                                                                                                                                                                                                                                                                                    3466 CCTCTGCCTGCTGCTGCTGCTGCTGCTGCAAAGGGCCCAAGACTCTCTCCCCA 3525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3106 GCCCCGGGCGCTGGGGGCATGGTCCACCACAGGCACCGCAGCTCATCTACCAGGAGTGGC 3165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              368 AlaProSerGluGlyAlaGlySerAspValPheAspGlyAspLeuGlyMetGlyAlaAla 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                348 GlyGlyAspLeuThrLeuGlyLeuGluProSerGluGluGluAlaProArgSerProLeu 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330
                                                                                                         508 AlaPheAspAsnLeuTyrTxpAspGlnAspProProGluArgGlyAlaProProSer 527
                                                                                                                                                                                                               488
                                                                                                                                                                                                                                                                                               468
                                                                                                                                                                                                                                                                                                                                                                               448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 388
                                           528
                                                                                                                                                                                         TyrLeuThrProGlnGlyGlyAlaAlaProGlnProHisProProProAlaPheSerPro 507
                                                                                                                                                                                                                                                  GlyLysAsnGlyVallValLysAspValPheAlaPheGlyGlyAlaValGluAsnProGlu 487
                                                                                                                                                                                                                                                                                                                                                                                                                    ProThrValProLeuProSerGluThrAspGlyTyrValAlaProLeuThrCysSerPro 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LysGlyLeuGlnSerLeuProThrHisAspProSerProLeuGlnArgTyrSerGluAsp 407
                                                                                                                                                                      TACTTGACACCCCAGGGAGGAGCTGCCCCTCAGCCCCACCCTCCTCCTGCCTTCAGCCCA 3645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACCTGGTGGATGCTGAGGAGTATCTGGTACCCCAGCAGGGCTTCTTCTGTCCAGACCCT 3105
ProLeuProAlaAlaArgProAlaGlyAlaThrLeuGluArgAlaLysThrLeuSerPro 467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGGGCTGCAAAGCCTCCCCACACATGACCCCCAGCCCTCTACAGCGGTACAGTGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCACCCTCCGAAGGGGCTGGCTCCGATGTATTTGATGGTGACCTGGGAATGGGGGCAGCC 3285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGGGGACCTGACACTAGGGCTGGAGCCCTCTGAAGAGGAGGCCCCCAGGTCTCCACTG 3225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----GlyAlaGlyGlyMetValHisHisArgHisArgSerSerSerThrArgSerGly 347
                                                                                  GCCTTCGACAACCTCTATTACTGGGACCAGGACCCACCAGAGCGGGGGGGCTCCACCCAGC 3705
                                                                                                                                                                                                                                                                                                                                                                                                                        3465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3405
```

Search completed: May 8, 2003, 14:16:48 Job time: 4411 secs

밁 õ 밁 Š 밁 Ş 밁 Ş 밁 Š 밁 ð 밁 Q 밁 ð 밁 õ 밁 Ş 밁 Š 밁



**;;** -

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to a score greater than or equal to the score of the result being and is derived by analysis of the total score distribution
             1961
1950.5
1948
1612
1612
1612
                                                                                                               2410.5
2410.5
2410.5
2405.5
2405.5
                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                               11...
11...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-821-883-2
3739
100.0
792.5
792.5
664.5
664.5
664.5
564.3
572.4
43.11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            April 28, 2003, 13:40:24; Search time 25.3846 Seconds
                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301932 seqs, 80129803 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MRAAPLLLARAASLSLGFLF.....EPVQEGAPPPPAAAHHHHHH
                                                                                                                                                                                                                                                                      Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Published_Applications_AA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                              /cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/1/pubpaa/PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:
                                                                                                                                                                                                                                                                                                                                                                                       /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                          /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*
                                                                                                                                                                                                                                                          Length
479
1256
1260
1256
645
653
712
                                                                                                                                                                                                                                                            ВG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gapext 0.5
                                                                                                                                                                  9 9 01
                                                  10
9
9
9
9
                                                US-09-854-356-1

US-09-930-125-2

US-09-441-411-6

0 US-09-821-883-5

US-09-854-356-14

US-09-870-759-118

US-09-870-759-118
                                                                                                                                       0 US-09-821-883-3
US-09-854-356-6
US-09-769-508-2
0 US-09-811-123-9
0 US-09-811-115-3
             US-09-854-356-3
US-09-854-356-7
                                      US-09-921-161-1
                                                                                                                                                                                                                   US-09-821-883-2
US-09-821-883-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     summaries
                                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (without alignments)
2178.074 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                   chance to have a result being printed,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301932
                                                                                                                                                                                                                                                        Description
             Sequence
Sequence
                                                                                       Sequence 1
Sequence 2
Sequence 6
Sequence
                                                                                                                                                               Sequence
Sequence
                                                  Sequence
                                                             Sequence
                                                                         Sequence
                                     Sequence
                                                                                                                                          Sequence
                                                                                                                                                    Sequence
                                                                                                                                                                                          Sequence
                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                               Sequence
                                                            e 5, Appli
14, Appl
118, App
                                                                                                                                                               6, Appli
2, Appli
                                                                                                                                       9, Appli
3, Appli
          Appli
Appli
                                    Appli
Appli
                                                                                                   Appli
                                                                                                             Appli
                                                                                                                                                                                                                  Appli
Appli
                                              Ş
                                                                         Db
                                                                                                                            밁
                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-821-883-2
```

4 4 4 5 4 5	41	39 40	2 3 C	ν ω ω	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
373.5 255	673 648.5	673 673	684	704.5	713.5	717	721	721	721	893	1182.	1182	1182	1183	1183	1183	1183	1183	1367.5
10.0	18.0 17.3	18.0	18.3	18.8	19.1	19.2	19.3	19.3	19.3	23.9	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	36.6
127 219 120	127 135	127	610	1342	615	293	1308	1210	657	191	1179	397	217	600	589	587	583	266.	654
9 10	10	10	10	٦,	10	ø	10	10	ø	9	10	10	10	9	9	9	9	9	9
US-09-847-185-2 US-09-847-185-2 US-10-172-620-17	US-09-800-016-1 US-09-925-301-1232	US-09-792-793A-15 US-09-821-883-18	US-09-783-708-1	US-09-867-521-2	US-09-940-101-4	US-10-102-806-583	US-09-940-101-2	US-09-725-433-2	US-10-172-620-18	US-09-441-411-9	US-09-821-883-29	US-09-821-883-27	US-09-821-883-25	US-09-930-125-11	US-09-930-125-10	·US-09-930-125-8	US-09-930-125-9	US-09-854-356-4	US-09-854-356-8
Sequence 20, Appl Sequence 2, Appl1 Sequence 17, Appl	$\sim$	Sequence 15, Appl Sequence 18, Appl	Sequence 1, Appli	Sequence 2, Appli	Sequence 4, Appli	Ψ	Sequence 2, Appli	-	Sequence 18, Appl	Sequence 9, Appli	Sequence 29, Appl	Sequence 27, Appil	Sequence 25, Appil	Sequence 11, Appl	Sequence 10, Appl	Sequence 8, Appli	Sequence 9, Appli	Sequence 4, Appli	Sequence 8, Appli

## ALIGNMENTS

```
; OTHER INFORMATION: HER500-hGM-CSF construct US-09-821-883-2
                                                                                                                                                                                                                                                                                                     Matches 690; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 2
LENGTH: 690
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
CURRENT FILING DATE: 2001-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                              121 VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
181 CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                            61
                                                                                                                                  61
                                                                                                                                                                                                                                               1 MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET 60
                                                                                                                                  HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI
                                                                                                                                                       HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVKQVPLQRLRI 120
                                                                                                                                                                                                                        MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                       100.0%; Sc
100.0%; Pr
~++ve 0;
                                                                                                                                                                                                                                                                                                          Score 3739; DB 10;
Pred. No. 4e-212;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                      Length 690;
                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                            Gaps
  240
                                                                                      180
                                                                                                                                    120
                                                                                                                                                                                                                        60 .
                                            180
                                                                                                                                                                                                                                                                                                              0
```

```
APPLICANT: LAUS, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION UNUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 4
                        Ş
                                                                      Ş
   밁
                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 2
US-09-821-883-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4, Application US/09821883 Patent No. US20020061310A1
                                                                                                      Matches
                                                                                                                Query Match
Best Local (
                                                                                                                                                                                 TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                   OTHER INFORMATION:
                                                                                                                                                                                                                    ENGTH: 697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                   Local Sin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
   61
                          61
                                                                            -
MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LGLDVPAAAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                   MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAVENPEYLTPOGGAAPOPHPPPAFSPAFDNLYYWDODPPERGAPPSTFKGTPTAENPEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LGLDVPAAAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEP
                                                                                                                  Similarity
                                                                                                    Conservative
                                                                                                                                                                   HER500*-rGM-CSF construct
                                                                                                  92.9%; Score 3473.5;
91.7%; Pred. No. 1.66
tive 19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           690
                                                                                                                5; DB 10;
.6e-196;
                                                                                                    Indels
                                                                                                                           Length
                                                                                                   11;
                                                                                                  Gaps
                                                 60
                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                   Ņ
```

```
Ъ
                 ρy
                                                                                            ; OTHER INFORMATION: HER500 construct US-09-821-883-1
                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                              US-09-821-883-1
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                 NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 1
                                               Matches
                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US Patent No. US20020061310A1
                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                                   APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
                                                                                                                          TYPE: PRT ORGANISM: Artificial Sequence
                                                                                                                    FEATURE:
                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                  652
                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
EDFIKNLKGFLFDIPFDCWKPVQKGAPPPP--AHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                       ESFKENLKDFLLVIPFDCWEPVQEGAPPPPAAAHHHHHH 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEMFDLQEPTCLQTRLELYKQGLRGSLTKLKGFLTMMASHYKQHCPPTPETSCATQIITF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MPNPEGRYTFGASCVTACPYNYLSTDVGS------GAGGMVHHRHRSSSTRSGGGDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SNEFSIORPTCVQTRLKLYKQGLRGNLTKLNGALTMIASHYQTNCPPTPETDCEIEVTTF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MPNPEGRYTFGASCYTACPYNYLSTDYGSASIINFEKLGAGGMYHHRHRSSSTRSGGGDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                         555
                                                          Similarity
                                             Conservative
                                                        79.5%;
                                                                                                                                                                                                                                                                                                                                                US/09821883
                                               0,
                                                        Score 2972; DB 10;
Pred. No. 3.6e-167;
                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                            697
                                                                    Length
                                               Indels
                                                                      555;
                                               0;
                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                          660
  60
                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

S

61

```
APPLICANT: VIGOVIC, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Der
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR TILING DATE: 2000-03-30
OPRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
              Ş
                                           밁
                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                   US-09-821-883-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-821-883-3
                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3, Application US/09821883
Patent No. US20020061310A1
GENERAL INFORMATION:
                                                                                                                    Query Match
Best Local
                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Laus, Reiner
                                                                                                                                                                                                         LENGTH: 564
TYPE: PRT
ORGANISM: Artificial
                                                                                                                                                                                OTHER INFORMATION:
                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                         ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
               61
                                                                          μ
                                          MRAAPLILARAASISIGFLFILFFWIDRSVIAKELARGAASTQVCTGTDMKLRIPASPET 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LGLDVPAAA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LGLDVPAAA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MPNPEGRYTFGASCYTACPYNYLSTDYGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VRGTQLFEDNYALAVLDNGDPLNNTTPYTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDTQEVQGYVLIAHNQVRQVPLQRLRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
Similarity
                                                                                                      Conservative
                                                                                                                                                                                HER500* construct
                                                                                                                                                                                                         Sequence
                                                                                                                    79.18;
98.48;
                                                                                                      0
                                                                                                  Score 2957.5; DB 10
Pred. No. 2.6e-166;
Pred. No. 2.6e-166;
                                                                                                                                  DB 10;
                                                                                                      Indels
                                                                                                                                 Length
                                                                                                     9;
                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
```

Ş

95

DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 154

```
Б
                            δõ
                                                                                                                                                                                                                                                                                                APPLICANT: Gheysen, Dirk
APPLICANT: Grixa Corporation
APPLICANT: SuithKiine Beecham Biologicals S. A.
TITLE OF INVENTION: HER-2/neu Fusion Proteins
FILE REFERENCE: 014058-099810PC
CURRENT APPLICATION NUMBER: US/09/854,356
CURRENT FILING DATE: 2001-05-09
PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR FILING DATE: 2000-01-28
PRIOR FILING DATE: 2000-01-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ·Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                       US-09-854-356-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-854-356-6
                                                           Best Loc
Matches
                                                                                                                                                                SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 6
LENGTH: 919
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 6, Application US/09854356 Patent No. US20020177567A1 GENERAL INFORMATION:
                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Cheever, Martin A. APPLICANT: Gheysen, Dirk APPLICANT: Gorysen, Doration APPLICANT: SmithKline Beecha
                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US 60/117,976 PRIOR FILING DATE: 1999-01-29 NUMBER OF SEQ ID NOS: 26
                                                                                                                                   OTHER INFORMATION: OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
 16
              35 LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ 94
                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MPNPEGRYTFGASCYTACPYNYLSTDVGS------GAGGMVHHRHRS3STFSGGGDL 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TPTAENPEYLGLDVPAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVP 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYQDTILWKDIFHKNNQLALTLIDINRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA 240
LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TPTAENPEYLGLDVPAAA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MPNPEGRYTFGASCVTACPYNYLSTDVGSASIINFEKLGAGGMVHHRHRSSSTRSGGGDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVP
                                                                           Similarity
                                                             Conservative
                                                                                                                                   Description of ECD and I
                                                                         68.88;
56.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               558
                                                             0;
                                                          Score 2573.5; DB 9
Pred. No. 1.7e-143;
); Mismatches 3;
                                                                                                                                     n of Artificial Sequence:fusion PD of human HER-2/neu
                                                                                                                                                                                                                                                                                                                                                                                             P
                                                                                       9:
                                                             Indels
                                                                                      Lenyth
                                                             391;
                                                                                                                                                   protein
                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
   75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                           ۲
```

```
RESULT 6
US-09-769-508-2

Sequence 2, Application US/09769508

Patent NO. US20020155527A1

GENERAL INFORMATION:
APPLICANT: STUART, SUSAN G.
APPLICANT: HANGOOK, BEATRICE CLAUDIA
APPLICANT: HANGOCK, MIRIAM E.C.
APPLICANT: HANGOCK, DETER A.
APPLICANT: BLUFORD, DETER
TITLE OF INVENTION: C-ERBB-2 EXTERNAL DOMAIN: GP:
FILE REFERENCE: BEBIO-111-C1
CURRENT APPLICATION NUMBERS.
                                                                                                                                                                           밁
                                                                                                                                                                                             õ
                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                 544
                                                                                                                                                                                                                      856
                                                                                                                                                                                                                                                                                                                                                 676 DDMGDLVDAEEYLVPQQGFFCPDPAPGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAP
                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                            919
                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                      556
                                                                                                                                                                                                                                                                                                                                                                                                                                                           330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             155
                                                                                                                                                                                                                                          484
                                                                                                                                                                                                                                                                796
                                                                                                                                                                                                                                                                                    424
                                                                                                                                                                                                                                                                                                         736
                                                                                                                                                                                                                                                                                                                              364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76
                                                                                                                                                                                                                                                                                                      LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                DVP 546
                                                                                                                                                                                                                                                              FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSQNEDLGPASPLDSTFYRSLLED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                 ENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TANRPEDECYGEGLACHOLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                      ENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGL
                                                                                                                                                                                                                                                                                                                                                                                                                                   NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK
                                                                                                                                                                             918
                                                                                                                                                                                                                                                                                                                                                                      -----GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            375
                                                                                                                                                                                                                      915
                                                                                                                                                                                                                                         543
                                                                                                                                                                                                                                                              855
                                                                                                                                                                                                                                                                                  483
                                                                                                                                                                                                                                                                                                         795
                                                                                                                                                                                                                                                                                                                             423
                                                                                                                                                                                                                                                                                                                                                                      363
                                                                                                                                                                                                                                                                                                                                                                                           675
                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                     615
                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                135
```

```
. , pb
                                                                                 밁
밁
                Ş
                                       밁
                                                          Š
                                                                                                   δ
                                                                                                                                               Ş
                                                                                                                                                                    밁
                                                                                                                                                                                       δõ
                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; TYPE: PRT
; ORGANISM: Homo
US-09-769-508-2
                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT FILING DATE:
NUMBER OF SEQ ID NOS:
SOFTWARE: Patentin Ver
SEQ ID NO 2
LENGTH: 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 64.5%;
Best Local Similarity 41.2%;
Matches 510; Conservative
                                                                                                                           676 KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY
                                                                                                                                                                  616 FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVVLGVVFGILI
                                                                                                                                                                                                              556
                                                                                                                                                                                                                                                        496
                                                                                                                                                                                                                                                                                                 436
                                                                                                                                                                                                                                                                                                                                           376
                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                    316
                                                                                                                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                136
                                                                                                                                                                                                                                                                                                                                                                                                                             256 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TANRPEDECVGEGLACHQLCARRALLGSGPTQCVNCSQFLRGQECVEECRVLQGLPREYV 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL
                                      LYTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS
                                                                                                                                                                                                              NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 615
                                                                                                                                                                                                                                                                                                 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH
                                                                                                                                                                                                                                                                                                                                                                                                                                          LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ
                                                                                                                                                                                                                                                                                                                                           FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQ'\, IRGRI
                                                                                                                                                                                                                                                                                                                                                                                    PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-01-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 2410.5; DB 9; Pred. No. 9.1e-134;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels 727; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length. 1255;
                                                                                                                                                                                                                                                                                                                                                                                     375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    214
                                                                                                                            735
                                                                                                                                                                      675
                                                                                                                                                                                                                                                                                                   495
                                                                                                                                                                                                                                                                                                                                           435
 915
                                                                                   795
                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                              315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94
                                                              329
                                                                                                                                                 329
                                                                                                                                                                                         329
                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ٠,
```

215 196 275 256	155 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC	95 DIQEVOGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNVALAVLDNGDPLNNTTPVTGASPG	TDMKLRLPASPETHLDMLRHLYCGCOVVOGNLELTVLPTNASLSFLQ 94	Query Match 64.5%; Score 2410.5; DB 10; Length 1255; Best Local Similarity 41.2%; Pred. No. 9.1e-134; Matches 510; Conservative 0; Mismatches 2; Indels 727; Gaps	S	; SEQ ID NO 9 ; LENGTH: 1255	NUMBE	; PRIOR FILING DATE: 2000-10-05; PRIOR APPLICATION NUMBER: 09/602,530; PRIOR FILING DATE: 2000-06-23		FILE REFERENCE: GENENT.073A2  CURRENT APPLICATION NUMBER: US.		APPLICANT: S		Sequence 9, Application US/09811123	RESULT 7	DD 1416 AFUNLIYMUQUPPEKGAPPSTFKGTPTAENPEILGLUVP 1434	508 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP	Db 1156 PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 1215	Qy 448 PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 507	1096 KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG	388 KGLOSLPTHDPSPLORYSEDPTVPLPSETDGYVAPLTCSPOPEYVNOPDVRPOPPSBREG 447	1036 APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSSGAGSSVFDGDLGMGAA	330	976 FGRMADDDDDVVITANEDI GDAGDI DGTRVBGTI FTDDMGTI VDAREVI VBOOGBFGDDD		5 '
						•							•		-		<del></del>								-	: . · · · · · · · · · · · · · · · · · ·
RESULT 8 US-09-811-115-3 ; Sequence 3, Application US/09811115 ; Patent No. US20020035736A1 ; GENERAL INFORMATION: ; APPLICANT: Erickson, Sharon ; APPLICANT: Schwall, Ralph	Qy 508 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546	Qy 448 PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPOGGAAPOPHPPPAFSP 507	QY 388 KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG 447	Qy 330GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 387 .	976 FSRMARDPORFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQOGFFCPDP	Qy 330 329	916 MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE	Db 856 PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL 915	Qy 330 329	Db 796 LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 855	Qy 330 329	Db 736 KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 795	Оу 330 329	Db 676 KRRQQKIRKYIMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735	Qy 330 329	Db 616 FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVVLGVVFGILI 675	330	556 NARHCLPCHPECOPONGSVTCFGPEADOCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK	Db 496 TANRPEDECYGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECYEECRYLQGLPREYV .555	0	Db 436 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495	Qy 330 329	Db 376 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435	Qy 330 329	Db 316 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375	. Oy 330 329

:.

```
S
                           밁
                                                    õ
                                                                                밁
                                                                                                           Ş
                                                                                                                                         밁
                                                                                                                                                                  Ş
                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                              용
                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TYPE: PRT; ORGANISM: Homo sapiens US-09-811-115-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 64.5%;
Best Local Similarity 41.2%;
Matches 510; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 4
SOFTWARE: FRStSEQ for Windows Version 4.0
SEQ ID NO 3
LENGTH: 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/811,115
CURRENT ETLING DATE: 2001-03-16
PRIOR APPLICATION NUMBER: 60/189,844
PRIOR FILING DATE: 2000-03-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: King, Kathleen
TITLE OF INVENTION: HER-2 TRANSGENIC NON-HUMAN TUMOR MODEL
FILE REFERENCE: GENERY 034A
 330
                                                       330
                                                                               676 KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735
                                                                                                               330
                                                                                                                                                                     330
                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                           436 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            215 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          616 FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVVLGVVFGILI 675
                                                                                                                                                                                              556 NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 615
                                                                                                                                                                                                                                                     496 TANRPEDECYGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECYEECRYLQGLPREYV 555
                                                                                                                                                                                                                                                                                                                                                                 376 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                                                                                                                                                                                         316 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 76 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                          KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 2410.5; DB 10; Length 1255;
Pred. No. 9.1e-134;
0; Mismatches 2; Indels 727; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154
329
                                                                                                                                                                  329
                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
```

Query R Best Lc	COCATION: COTHER INF COTHER INF COTHER INF US-09-854-356	LOCATION: OTHER INF	LOCATION: OTHER INF	LOCATION: OTHER INF	OTHER IN		; LENGTH:	유무	; PRIOR	; PRIOR	m m	Harre :		; APPLICANT:	GENERAL	Seguen	RESULT 9	Db 1216	Qу 508	_	Qy 448	Db 1096	Qу 388	Db 1036	Qу 330	Db 976	Оу 330	Db 916	05 до	Db 856	Оу 330	pb 796
Match 64.3%; Score 2405.5; DB 9; Length 1255; Local Similarity 41.1%; Pred. No. 1.8e-133;	ION: INFO INFO	Ó	INEO	NEV.	OKRE: R INFORMATION: human HER-2/neu protein KRY: DOMAIN	re: rki RGANISM: Homo sapiens Ramide:		SEQ ID NOS: 26 PatentIn Ver. 2.1	NUMBER: U	APPLICATION NUMBER: US 09/493,480 FILING DATE: 2000-01-28	APPLICATION NUMBER: US/09/85 FILING DATE: 2001-05-09	REFERENCE: 014058-009810PC	ANT: COLLYA COLPOTALION ANT: Smithkline Beecham Biologicals	Cheever, Martin Gheysen, Dirk	INFORMATION:	,-	0-356-1	5 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254			PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 507			5 APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 1095		FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP 1035	329	5 MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 975	329	5 PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL 915	329	5 LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 855

٠.:

```
Matches
1036
                        330
                                                                                                                                                                                                                                                                                                                                                616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155
                                                                                                916
                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                               736
                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                676
                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                                                                                                556
                                                                                                                                                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                                                                                                                                                496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     215
                                                                                                                                                                                                796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 1095
           --GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA
                                                                                             MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE
                                                                                                                                                                                             LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS
                                                                                                                                                                                                                                                                                              KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735
                                                                                                                                                                                                                                                                                                                                                                                                                                              TANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                            FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP 1035
                                                                                                                                              PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL 915
                                                                                                                                                                                                                                              KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ
                                                                                                                                                                                                                                                                                                                                             FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                               NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                       387
                                                                                              975
                                                                                                                     329
                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                675
                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                              555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    274
                                                                                                                                                                                               855
                                                                                                                                                                                                                                               795
                                                                                                                                                                                                                                                                                                                                                                                               615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    214
                                                                      329
                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ļ.
                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: OWNOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS
TITLE OF INVENTION: OF HER-2/NEU-ASSOCIATED MALIGNANCIES.
FILE REFERENCE: 210121.544
CURRENT APPLICATION UNMBER: US/09/930.125
CURRENT FILING DATE: 2001-08-14
NUMBER OF SEQ ID NOS: 25
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
LENGTH: 1255
TYPE: PRT
ORGANISM: Homo sapien
        Ş
                                                       Ωy
                                                                                В
                                                                                                      Š
                                                                                                                                                       δÃ
                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                 망
                                                                                                                                밁
                                                                                                                                                                                  밁
                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-930-125-2

; Sequence 2, Application US/09930125

; Publication No. US20020193329A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION: APPLICANT: Hand-Zim
                                                                                                                                                                                                                                                                                                                                                                                 Query Match 64.3%;
Best Local Similarity 41.1%;
Matches 509; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 388
           330
                                  376
                                                                                316
                                                                                                          330
                                                                                                                                 256
                                                                                                                                                         275
                                                                                                                                                                                  196
                                                                                                                                                                                                         215
                                                                                                                                                                                                                                   136
                                                                                                                                                                                                                                                          155
                                                                                                                                                                                                                                                                                                                                 76
                                                                                                                                                                                                                                                                                                         95
                                                                                                                                                                                SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                  LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC
                                                                                                                                              LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cheever, Martin A.
Foy, Teresa M.
Lodes, Michael J.
Kalos, Michael D.
McNeill, Patricia D.
Vedvick, Thomas S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hand-Zimmerman, Susan
                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                 Score 2405.5; DB 9; Pred. No. 1.8e-133; 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                  Indels 727;
                                                                                                                                                                                                                                                                                                                                                                                                         Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                   75
                                                                                                                                                                                                                                                                                                                                                          94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 447
                                                                                  375
                                                                                                                                 315
                                                                                                                                                                                  255
                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                        214
                                                                                                                                                                                                                                                                                   135
                                                                                                                                                                                                                                                                                                         154
```

밁 õ В S 8 ð 밁 õ 밁 Š 밁 õ 밁 δ 밁 δ 밁 Ş В Ş 밁 Ş ₽ Ş В Ş B Q 밁 ő 밁 δ 밁 Ş 뭐 Ş

329

329

329

329

274

<u>;</u>

۲,

```
RESULT 11
US-09-441-411-6
                                                                                           Sequence 6, Application US/09441411
Publication No. US20030008342A1
GENERAL INFORMATION:
APPLICANT: Scholler, Nathalie B.
APPLICANT: Disis, Mary L.
APPLICANT: Hellstrom, Ingegerd
APPLICANT: Hellstrom, Karl Erik
TITLE OF INVENTION: SURFACE RECEPTOR ANTIGEN VACCINES
FILE REFERENCE: 730033.409
          NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
SEQ ID NO 6
LENGTH: 1255
                                                                  CURRENT APPLICATION NUMBER: US/09/441,411
CURRENT FILING DATE: 1999-11-16
TYPE: PRT
                                                                                                                                                                                                                                                                                  1216
                                                                                                                                                                                                                                                                                                                                        1156
                                                                                                                                                                                                                                                                                                                                                                                               1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1036
                                                                                                                                                                                                                                                                                                            508
                                                                                                                                                                                                                                                                                                                                                                   448
                                                                                                                                                                                                                                                                                                                                                                                                                         388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      436
                                                                                                                                                                                                                                                                                                                                    KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                                                                                                 FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVVLGVVFGILI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK
                                                                                                                                                                                                                                                                                 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                              AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRFTHQSDVWSYGVTVWEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LHNGAYSCTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH
                                       for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                       1215
                                                                                                                                                                                                                                                                                                                                                                                            1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1035
                                                                                                                                                                                                                                                                                                                                                                507
                                                                                                                                                                                                                                                                                                                                                                                                                        447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ...
        Ş
                                    밁
                                                               Ş
                                                                                           밁
                                                                                                                   Ş
                                                                                                                                                  밁
                                                                                                                                                                           õ
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Homo sapiens US-09-441-411-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                            856
                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        916 MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 975
                                                                                                                                                    796
                                                                                                                                                                                                          736
                                                                                                                                                                                                                                                                  676
                                                                                                                                                                                                                                                                                                                                                                              556 NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK
                                                                                                                                                                                                                                                                                                                                                                                                                                   496 TANRPEDECYGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECYEECRYLQGLPREYY 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           436 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                376 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        316 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              275 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     215 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                    LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 855
                                                                                                                                                                                                                                                                KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735
                                                                                            PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL 915
                                                                                                                                                                                                          KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ
                                                                                                                                                                                                                                                                                                                        FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 2405.5; DB 9;
Pred. No. 1.8e-133;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels 727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . . . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                              615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        154
                                                                  329
                                                                                                                         329
                                                                                                                                                                                                            795
                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                        675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75
                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329
```

Ş

밁

Ş

밁

õ

밁

S

밁

Ş

밁

Ş

밁 S 밁 S 밁 õ 밁 õ 밁 Š 밁 S 밁 ő 밁

```
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Der
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 5
                                                              δ
                                                                                                       밁
                                                                                                                                      Ş
                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
 S
                                    믕
                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; FEATURE:
; OTHER INFORMATION: HER300*-rGM-CSF construct
US-09-821-883-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
US-09-821-883-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 426; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 5, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Laus, Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 479
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330 --GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 388
                                    301
                                                                      301
                                                                                                         241
                                                                                                                                          241
                                                                                                                                                                                             181 CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA 240
                                                                                                                                                                                                                                            121 VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         976
                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                   61 HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI 120
                                                                                                                                                                                                                                                                                                                                    61 HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI 120
                                                                                                                                                                                                                                                                                                                                                                                                          1 MRAAPLLLARAASLSIGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                          1 MRAAPLILARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                     MPNPEGRYTEGASCVTACPYNYLSTDVGSAS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
EAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYV 420
                                                                      MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                                                                                                                                           CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                              58.5%; Score 2188.5; DB 10; Length 479; 61.7%; Pred. No. 3.3e-121; tive 22; Mismatches 31; Indels 211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dendritic
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1035
                                    331
                                                                                                                                        300
                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.
```

	LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYT 309	QY 250 LPTDCCHEQCAAGCTGPKHSDCI
	PPCAPTCNUNHCWGESPEDCQILTGTICTSGCARCAGR 231	DO 1/2 DYLKKNNQLAFYDMDTNKSKACE
	٠ د	177
		100
	YALAVLDNRDPLDNVTTAAPGRTPEGLRELQLRSLTEILKGGVLIRGNPQLCYQDMVLWK 171	Db 112 YALAVLDNRDPLDNVTTAAPGRI
	SPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWK 189	Qy 131 YALAVLDNGDPLNN-TTPVTGAS
	QDIQEVQGYMLIAHNRVKHVPLQRLRIVRGTQLFEDK 111	Db 52 GCQVVQGNLELTYLPANASLSFI
	GCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDN 130	Qy 71 GCQVVQGNLELTYLPTNASLSFI
	LSPGAAGTQVCTGTDMKLRLPASPETHLDMLRHLYQ 51	Db 4 AAWCRWGFLLAL
	ILGFLFELLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQ 70	QY 11 AASLSLGFLFLLFFWLDRSVLA
ω	Score 1961; DB 9; Length 1256; Pred. No. 2.4e-107; 23; Mismatches 67; Indels 740; Gaps 3	Query Match S2.4%; Best Local Similarity 34.3%; Matches 434; Conservative
	-2/neu protein	
		; ORGANISM: Mus sp. ; FEATURE:
		; LENGTH: 1256 ; TYPE: PRT
		; SOFTWARE: PatentIn Ver. 2.1 ; SEQ ID NO 14
		; NUMBER OF SEQ ID NOS: 26
	50/117,976	PRIOR PPPLICATION NUMBER: US (
	79/493,480	PRIOR APPLICATION NUMBER: US (
	5/09/854,356 -09	; CURRENT APPLICATION NUMBER: US ; CURRENT FILING DATE: 2001-05:
		; TITLE OF INVENTION: HER-2/neu ; FILE REFERENCE: 014058-0098101
٠	ໝ	<pre>; APPLICANT: Corixa Corporation ; APPLICANT: SmithKline Beechar</pre>
		; APPLICANT: Cheever, Martin A. ; APPLICANT: Gheysen, Dirk
		; Patent No. US20020177567A1 ; GENERAL INFORMATION:
	354356 ·	RESULT 13 US-09-854-356-14 ; Sequence 14, Application US/09854356
	-АННННН 479	Db 452 FLFDIPFDCWKPVQKGAPPPP-
	ланнннн 690 	Qy 661 FLLVIPFDCWEPVQEGAPPPPAAAHHHHHH
	GALTMIASHYQTNCPPTPETDCEIEVTTFEDFIKNLKG 451	Db 392 TCVQTRLKLYKQGLRGNLTKLNG
	TCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKD 660	Qy 601 TCLQTRLELYKQGLRGSLTKLKO
	HVDAIKEALSLLNDMRALENEKNEDVDIISNEFSIQRP 391	Db 339AAPTRSPNPVTRPWKI
	LDVPAAAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEP 600	Qy 541 LGLDVPAAAPARSPSPSTQPWEI
•	FERL 338	Db 335
	·β	Qy 481 GAVENPEYLTPQGGAAPQPHPPI
	334	Db 332IIN
	PQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG 480	QY 421 APLTCSPQPEYVNQPDVRPQPP
	331	Db 332

```
밁
                                                                 S
                                                                                        В
                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                         õ
RESULT 14
US-09-870-759-118
                                                                                                                                     В
                                                                                                                                                        S
                                                                                                                                                                                  밁
                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                             1252
                                                                                          1192
                                                                                                                                       1132
                                                                                                                                                                                  1072
                                                                                                                                                                                                                            1012 DDDMGELVDAEEYLVPQQGFFSPDPALGTGSTAHRRHRSSSARSGGGELTLGLEPSEEEP
                                                                  543
                                                                                                                483
                                                                                                                                                            423
                                                                                                                                                                                                        363
                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                                                      892
                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             352
                                                                                                                                                                                                                                                                         952 VYMIMVKCWMIDSECRPRFRELVSEFSRMARDPQRFVVIQNEDLGPSSPMDSTFYRSLLE 1011
                                                                                                                                                                                                                                                                                                                                                               832 KGMSYLEEVRLVHRDLAARNVLVKSPNHVKITDFGLARLLDIDETEYHADGGKVPIKWMA 891
                                                                                                                                                                                                                                                                                                                                                                                                          772 AYVMAGVGSPYVSRLLGICLTSTVQLVTQLMPYGCLLDHVREHRGRLGSQDLLNWCVQIA 831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         532 CSQFLRGQECVEECRVWKGLPREYVRGKHCLPCHPECQPQNSSETCYGSEADQCEACAHY 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              310 FGASCVTACPYNYLSTDVGS--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     232
                                                                                                                                                                                                                                                                                                                                                                                                                                                      712 QMRILKETELRKLKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               412 YISAWPESFQDLSVFQNLRVIRGRILHDGAYSLTLQGLGIHSLGLRSLRELGSGLALIHR
                                                                                        NTHLCFVNTVPWDQLFRNPHQALLHSGNRPEEACGLEGLVCNSLCARGHCWGPGPTQCVN 531
                                                                                                                                              LTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGA 482
                                                                                                                                                                                            PRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAP 422
                                             LDVP 1255
                                                                                                                                   LACSPOPEYVNOPEVRPOSPLTPEGPPPPIRPAGATLERPKTLSPGKNGVVKDVFAFGGA
                                                                                                                                                                                                                                                                                                                   LESILRRRFTHQSDVWSYGVTVWELMTFGAKPYDGIPAREIPDLLEKGERLPQPPICTID 951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VTFIIATVVGVLLFLIIVVVIGILIKRRRQKIRKYTMRRLLQETELVEPLTPSGAVPNQA 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KDSSSCVARCPSGVKPDLSYMPIWKYPDEEGICQPCPINCTHSCVDLDERGCPAEQRASP 651
                                                                  LDVP 546
                                                                                                                                                                                 PRSPLAPSEGAGSDVFDGDLAVGVTKGLQSLSPHDLSPLQRYSEDPTLPLPPETDGYVAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RGARAITSDNIQEFAGCKKIFGSLAFLPESFDGNPSSGVAPLKPEHLQVFETLEEITGYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FGASCYTTCPYNYLSTEVGSCTLVCPPNNQEVTAEDGTQRCEKCSKPCAGVCYGLGMEHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALITYNTDTFESMLNPEGRYT
                                                                                                                                                                                                                                                  ----GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEA
                                                                                                                                    1191
                                                                                          1251
                                                                                                                                                                                1131
                                                                                                                                                                                                                                                   362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         351
                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    291
                                                               δÃ
                                            밁
                                                                                         밁
                                                                                                            Ş
                                                                                                                                    밁
                                                                                                                                                        Q
                                                                                                                                                                                밁
                                                                                                                                                                                                     Q
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
```

```
PRIOR APPLICATION NUMBER: US 60/208,128
PRIOR FILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: Patentin version 3.1
SEQ ID NO 118
LENGTH: 1260
TYPE: PRI
믕
                                    ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: Rattus norvegicus US-09-870-759-118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: TERMAN, DAVID S
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 52.2%; Score 1950.5; DB 9; Best Local Similarity 34.1%; Pred. No. 9.8e-107; Matches 433; Conservative 24; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 118, Application US/09870759 Patent No. US20020177551A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/870,759
CURRENT FILING DATE: 2002-01-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 870759
                                                                                                                                                                   590
  710
                                                                                  650
                                                                                                                                                                                                                                                 530
                                                                                                                                                                                                                                                                                                                                                                                                                410
                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126 LFEDNYALAVLDNGDPLNNTTPVT-GASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQD 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66 RHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQ 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 IIMELAAWCRWGFLLAL------LPPGIAGTQVCTGTDMKLRLPASPETHLDML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNP 304
                                                                                                                                                                                                                                                                                                                                                                                                              ITGYLYISAWPDSLRDLSVFQNLRIIRGRILHDGAYSLTLQGLGIHSLGLRSLRELGSGL 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GMEHLRGARAITSDNVQEFDGCKKIFGSLAFLPESFDGDPSSGIAPLRPEQLQVFETLEE 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGRYTFGASCVTACPYNYLSTDVGS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RHLYQGCQVVQGNLELTYVPANASLSFLQDIQEVQGYMLIAHNQVKRVPLQRLRIVRGTQ
AMPNQAQMRILKETELRKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKAN 769
                                                                                EQRASPVTFIIATVEGVLLFLILVVVVGILIKRRRQKIRKYTMRRLLQETELVEPLTPSG
                                                                                                                                                                   AACAHYKDSSSCVARCPSGVKPDLSYMPIWKYPDEEGICQPCPINCTHSCVDLDERGCPA
                                                                                                                                                                                                                                               PTQCVNCSHFLRGQECVEECRVWKGLPREYVSDKRCLPCHPECQPQNSSETCFGSEADQC
                                                                                                                                                                                                                                                                                                                             ALIHRNAHLCFVHTVPWDQLFRNPHQALLHSGNRPEEDLCVSSGLVCNSLCAHGHCWGPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EGRYTFGASCVTTCPYNYLSTEVGSCTLVCPPNNQEVTAEDGTQRCEKCSKPCARVCYGL 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RCKGRLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMHNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LFEDKYALAVLDNRDPQDNVAASTPGRTPEGLRELQLRSLTEILKGGVLIRGNPQLCYQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels 741;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                   649
                                                                                                                                                                                                                                                   589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          109
                                            329
                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                          329
                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
```

domain, preferred

740;

Gaps

w ٠٠

171

329

329

329

329

```
RESULT 15
US-09-854-356-2
: Sequence 2, Application US/09854356
: Patent No. US20020177567A1
                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 26
SOFTWARE: PATENTIN VEr.
SEQ ID NO 2
LENGTH: 1256
TYPE: PRT
ORGANISM: RATTUS SP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR FILING DATE: 2000-01-28
PRIOR APPLICATION NUMBER: US 60/117,976
PRIOR FILING DATE: 1999-01-29
                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: 014058-009810PC
CURRENT APPLICATION NUMBER: US/09/854,356
CURRENT FILING DATE: 2001-05-09
                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Corixa Corporation
APPLICANT: Smithkline Beecham Biologicals S.
TITLE OF INVENTION: HER-2/neu Fusion Proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Cheever, Martin A.
NAME/KEY: DOMAIN
LOCATION: (721)..(998)
OTHER INFORMATION: kinase domain
                                                   NAME/KEY: DOMAIN
LOCATION: (1)..(654)
LOCATION: INFORMATION: extracellular domain (ECD)
NAME/KEY: DOMAIN
LOCATION: (677)..(1256)
COTHER INFORMATION: intracellular domain (ICD)
                                                                                                                                                           OTHER INFORMATION: rat HER-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1010 YRSLLEDDDMGDLVDAEEYLVPQQGFFSPDPTPGTGSTAHRRHRSSSTRSGGGELTLGLE 1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          830 WCVQIAKGMSYLEDVRLVHRDLAARNVLVKSPNHVKITDFGLARLLDIDETEYHADGGKV 889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDV 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSET 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PICTIDVYMIMVKCWMIDSECRPRFRELVSEFSRMARDPQRFVVIQNEDLGPSSPMDSTF 1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIKWMALESILRRRFTHQSDVWSYGVTVWELMTFGAKPYDGIPAREIPDLLEKGERLPQP 949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEILDEAYVMAGVGSPYVSRLLGICLTSTVQLVTQLMPYGCLLDHVREHRGRLGSQDLLN 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DGYVAPLACSPQPEYVNQSEVQPQPPLTPEGPLPPVRPAGATLERPKTLSPGKNGVVKDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PSEEGPPRSPLAPSEGAGSDVFDGDLAMGVTKGLQSLSPHDLSPLQRYSEDPTLPLPPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NPEYLGLDVP 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gheysen, Dirk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -GAGGMVHHRHRSSSTRSGGGDLTLGLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ÷.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; NAME/KEY: DOMAIN
; LOCATION: (991)..(1049)
; OTHER INFORMATION: fragment of the phosphorylation
; OTHER INFORMATION: portion (delta PD)
US-09-854-356-2
                     밁
                                                 õ
                                                                                            밁
                                                                                                                            Ş
                                                                                                                                                                   B
                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                           Дb
                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 433; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: (991)..(1256)
OTHER INFORMATION: phosphorylation domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       712
                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                              330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             131 YALAYLDNGDPLNNTTPVT-GASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILMK 189
                                                                                                                                                                                                                                                                                                                592 KDSSSCVARCPSGVKPDLSYMPIWKYPDEEGICQPCPINCTHSCVDLDERGCPAEQRASP 651
                                                                                                                                                                                                                                                                                                                                                                                       532 CSHFLRGQECVEECRVWKGLPREYVSDKRCLPCHPECQPQNSSETCFGSEADQCAACAHY 591
                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       412 YISAWPDSLRDLSVFQNLRIIRGRILHDGAYSLTLQGLGIHSLGLRSLRELGSGLALIHR 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 AASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQ 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71 GCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDN 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAHLCFVHTVPWDQLFRNPHQALLHSGNRPEEDCGLEGLVCNSLCAHGHCWGPGPTQCVN 531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KGMSYLEDVRLVHRDLAARNVLVKSPNHVKITDFGLARLLDIDETEYHADGGKVPIKWMA 891
                                                                                                                                                                 QMRILKETELRKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDE 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FGASCVTACPYNYLSTDVGS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAWCRWGFLLAL-------LPPGIAGTQVCTGTDMKLRLPASPETHLDMLRHLYQ 51
                                                                                          AYVMAGVGSPYVSRLLGICLTSTVQLVTQLMPYGCLLDHVREHRGRLGSQDLLNWCVQIA 831
                                                                                                                                                                                                                                         VTFIIATVEGVLLFLILVVVVVGILIKRRRQKIRKYTMRRLLQETELVEPLTPSGAMPNQA 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RGARAITSDNVQEFDGCKKIFGSLAFLPESFDGDPSSGIAPLRPEQLQVFETLEEITGYL 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FGASCYTTCPYNYLSTEVGSCTLVCPPNNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHL 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52.1%; Score 1948; I
34.3%; Pred. No. 1.40
tive 21; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8; DB 9;
1.4e-106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (PD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1256;
```

밁 ð 밁 Ş 밁 á 밁 Ş 밁 Ş 밁 Š 밁 Ş 밁 S 밁 Ş

892 LESILRREPTHQSDVWSYGVTVWELMTFGAKPYDGIPAREIPDLLEKGERLPQPPICTID 951 330
LESILRRRFTHOSDVWSYGVTVWELMTFGAKPYDGIPAREIPDLLEKGERLPOPPICTID 95

rch completed: April 28, 2003, 13:44:03 time : 40.3846 secs

Run on:

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2405
2405
2405
2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2405
2405
2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Issued_Patents_AA:*
1: /cgn2_6/ptodata/1,
2: /cgn2_6/ptodata/1,
3: /cgn2_6/ptodata/1,
4: /cgn2_6/ptodata/1,
5: /cgn2_6/ptodata/1,
6: /cgn2_6/ptodata/1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-821-883-2
3739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 April 28, 2003, 13:39:54; Search time 20.1923 Seconds (without alignments) 1005.423 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
     644.3
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
559.5
569.5
569.5
569.5
569.5
569.5
569.5
569.5
569.5
569.5
569.5
569.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MRAAPLLLARAASLSLGFLF.....EPVQEGAPPPPAAAHHHHHH 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /cgn2_6/ptodata/1/iaa/5a_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/Packfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                     US-08-467-083-68
US-08-414-4178-68
US-08-416-348A-68
US-08-466-348A-68
US-08-466-80B-68
US-08-466-80B-68
US-08-464-283-4
US-08-484-195-4
US-09-144-195-2
US-08-484-195-2
US-08-486-348A-69
US-08-484-388-69
US-08-484-338-1
US-08-484-338-1
US-08-484-338-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                    Sequence
Sequence
                                                                  Sequence
Sequence
                                                                                                                      Sequence
Sequence
                                                                                                                                                                                                                     Sequence
Sequence
                                                                                                                                                                                                                                                                   Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                            Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
Sequence
                                                                                                                                                                       Sequence
                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                     1, Appli
69, Appl
69, Appl
69, Appl
                                                                                                                                                                                                                                                                                                                                                 444,1
                                                                                                 Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                            Appl
Appl
Appl
Appl
Appl
Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Appl
                         App1
                                                                     Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 App1
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-JUN-1995
```

Result

THE	IN WHICH	PROTEIN MALIGNANCIES ED	S/08467083  rtin A. L. MUNE REACTIVITY TO HER-2/NEU BEACTIVITY B	tion  """  """  """  """  """  """  """	3, Applicatio 5726023 NPORMATION: WT: Cheever, WT: Disis, MT: Disis, F INVENTION: F INVENTION: F INVENTION: F INVENTION: F INVENTION: F SEQUENCES: SEE: Seed at: 1: 6300 COlu Seattle: Washington XY: US 98104-7092 READABLE FO 4 TYPE: Flap 11M PC 11M STEM:	OB3-0683-0683-0683-0683-0683-0683-0683-068	RESULT 1 US-08-467- Sequence Sequence Patent N GENERAL APPLI APPLI TITLE TITLE TITLE TITLE TITLE TITLE CORE ADDI STR STR STR COU STR COU OPE COMPU MED OPE
			ALIGNMENTS				
	10, Appl	Sequence	ь.	168		678	4. 1
			ی د	301	οœ.	680.5	4 4 3
			4.	301		680.5	42
				301		680.5	41
	142, App	Sequence	ωι	301	ω:	680.5	4 (
				274	ρα.	680 5	ມິດ
			4 1	274	18.5	693	37
			4	274	8	693	36
			w	274	8	693	35
	144, App	eduence :		274	18.5	693	34
			2 US-08-473-119-	1342	0 00	697	ນ ເປ ເປັນ ເປັນ ເປັນ ເປັນ ເປັນ ເປັນ ເປັນ ເປ
			N	1342	. 8	697	3 2
	4, Appli		1 US-07-978-895-	1342		697	30
		•	6 5183884-4	1343	8	698.5	29
	2, Appli	Sequence :	4	478	8	04.	28

; TYPE: amino acid ; TOPOLOGY: linear US-08-467-083-68 Query Match 64.3%; Best Local Similarity 41.1%; Matches 509; Conservative TELEFAX: (206) 682-6031
TELEX: 3723836 SEEDANBERRY
INFORMATION FOR SEQ ID NO: 68:
SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 920010.448C2
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08
FILING DATE: 06-JUN-1995
ATTORNEY/AGENT INFORMATION: US 08/414,417 pred. No. 4.8e 0; Mismatches 5; DB 1; 1.8e-179; hes 3; Indels 727; Gaps Length 1255;

۲.

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                          1036 APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 1095
                 388
                                                                                                    976
                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               496
                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                 736
                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                                                616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136
                                                                                                                                                           916 MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE
                                                                                                                                                                                                                  856 PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL
                                                                                                                                                                                                                                                                       796 LYTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS
                                                                                                                                                                                                                                                                                                                                                                                     676 KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     436 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          376 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16
KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 387
                                                                                                   FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP
                                                                                                                                                                                                                                                                                                                       KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TANRPEDECVGEGLACHQLCARCHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYL8TDVGSCTLVC
             447
                                                                                                   1035
                                                                                                                                                                                                                  915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154
                                                                                                                                                           975
                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                         855
                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75
```

õ

Ş

밁

Ş

Ş

밁

Ş

Ş ₽ S δ

S 밁

Ş

밁

Š

밁

Ş

밁 Ş 밁

밁

Ş 밁 Š 밁 õ 밁 Ş 밁 Š

.

```
Š
                                   В
                                                                  Q
                                                                                                        멍
                                                                                                                                         Ş
                                                                                                                                                                              Вр
                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-414-417B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                      Query Match 64.3%;
Best Local Similarity 41.1%;
Matches 509; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 68, Application US/08414417B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 68:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 32,629
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206, 62)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Cheever, Martin A.
APPLICANT: Disis, Mary L.
TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Sharkey, Richard G
REGISTRATION NUMBER: 32,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIP: 98104-7092
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
ADDRESSEE: Seed and Berry LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1216 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1096 KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
   275
                                                     215 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                            155 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        508 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546
                                                                                                         136 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/0 FILING DATE: 31-MAR-1995 CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 6300 Colu
CITY: Seattle
STATE: Washington
                                                                                                                                                                            76 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                 95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
   LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                       SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5801005
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/414,417B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G
                                                                                                                                                                                                                                                                                                                        Score 2405.5; DB 1;
pred. No. 4.8e-179;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Version
                                                                                                                                                                                                                                                                                                                          Indels 727;
                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IN WHICH THE
                                                                                                                                                                                  135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1215
                                       255
                                                                        274
                                                                                                           195
                                                                                                                                             214
                                                                                                                                                                                                                   154
                                                                                                                                                                                                                                                       75
                                                                                                                                                                                                                                                                                          94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            $
   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               507
                                                                                                                                                                                                                                                                                                                            1;
```

```
1156
                                                                                                                  1096
             1216
                                                                                                                                                               330 --GAGGMVHHRHRSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 387
                                      508
                                                                                        448
                                                                                                                                          388
                                                                                                                                                                                                                     976
                                                                                                                                                                                                                                              330
                                                                                                                                                                                                                                                                        916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                                                          856
                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                           796
                                                                                                                                                                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             256
                                                                                                                                                                                                                                                                                                                                                                                                                             736
          AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546
                                                                                                              KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                  FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP 1035
                                                                                                                                                                                                                                                                     MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NARHCLPCHPECOPONGSVTCFGPEADOCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TANRPEDECVGEGLACHQLCARCHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV 555
                                                                            PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 507
                                                                                                                                                                                                                                                                                                                       PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL
                                                                                                                                                                                                                                                                                                                                                                          LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 855
                                                                                                                                                                                                                                                                                                                                                                                                                          KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329
                                                                                                               1155
                                                                                                                                        447
                                                                                                                                                                 1095
                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                       915
                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                             329
                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
밁
                      Š
                                                밁
                                                                       δ
                                                                                                   밁
                                                                                                                       Š
                                                                                                                                                   밁
                                                                                                                                                                          δÃ
                                                                                                                                                                                                      В
                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                    196
376
                         330
                                                316
                                                                           330
                                                                                                   256
                                                                                                                            275
                                                                                                                                                                             215
                                                                                                                                                                                                      136
                                                                                                                                                                                                                                155
                                                                                                                                                                                                                                                         76
                                                                                                                                                                                                                                                                                 95
                                                                                                                                                                                                                                                                                                                                    35
                                                                                                                                                                                                                                                                                                            16
```

US-08-486-348A-68 ; Sequence 68, Application US/08486348A ; Patent No. 5846538 ; GENERAL INFORMATION:

밁 S 밁 Ş ₽ õ 밁 Ş 밁 Ş В Ş 문 6 밁 õ 밁 Ş 밁 õ 밁 õ 문 õ 밁 Ş g Ş 밁 õ 밁 S 맑

```
õ
                                밁
                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-486-348A-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/486
FILING DATE: 07-UN-1995
CLASSIETCATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Sharkey, Richard G.
REGISTRATION UUMBER: 32,629
REFERENCE/DOCKET NUMBER: 9200
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: (206) 682-60: INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPUTER: DN PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Cheever, Martin A.
APPLICANT: Disis, Mary L.
TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                  436
                                                                 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Seattle
STATE: Washing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
mes 509; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                            LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                                              SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 485
                                                                                                                                                             PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6300 Columbia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seed and Berry LLP
00 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (206) 622-4900
206) 682-6031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/486,348A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 2405.5; DB 2;
Pred. No. 4.8e-179;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 920010.448C6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps .
                                                                                                                                                                                                3291
                                                                                                                                                                                                                                                                                              255
                                                                                                                                                                                                                                                                                                                               274
                                                                                                                                                                                                                                                                                                                                                               195
                                                                                                                                                                                                                                                                                                                                                                                              214
                                                                                                                                                                                                                                                                                                                                                                                                                                135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THE
```

COUNTRY: 2IP: 98 COMPUTER F MEDIUM 1	; CORRESPONDENCE ADDRESS: ; ADDRESSEE: SEED and BERRY LLP; ; STREET: 6300 Columbia Center, 701 Fifth Avenue ; CITY: Seattle ; STATE: Washington	GENERAL INFORMATION: APPLICANT: Cheever, Martin A. APPLICANT: Disis, Mary L. APPLICANT: Disis, Mary L. TITLE OF INVENTION: COMPOUNDS FOR ELICITING OR ENHANCING IMMUNE TITLE OF INVENTION: REACTIVITY TO HER-2/neu PROTEIN FOR PREVENTION TITLE OF INVENTION: OR TREATMENT OF MALIGNANCIES IN WHICH THE HER-2/neu TITLE OF INVENTION: ORCOGENE IS ASSOCIATED UMBBER OF SEQUENCES: 4	Oy 508 AFDILYYWDQDPPERGAPPSTFKCTPTARNPEYLGLDVP 546	Db 1096 KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG 1155  OY 448 PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 507	387 109 447	Db 916 MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 975  Qy 330 329  Db 976 FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP 1035	329 915 329	736 KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 795 330 329 796 LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 855	OY 330 329  Db 676 KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735  OY 330 329	<b>а</b>	
330	Db 556 NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 615  Qy 330 329  Db 616 FPDERGACOPCPINCTHSCVDLDDKGCPAFORASPLTSIISAVVGILLVVVLGVVFGILI 675	436 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 330	316 PLHNOEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 330	Qy 275 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 329	155 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC		Query Match 64.3%; Score 2405.5; DB 2; Length 1255; Best Local Similarity 41.1%; Pred. No. 4.8e-179; Best Local Similarity 41.1%; Pred. No. 4.8e-179; Matches 509; Conservative 0; Mismatches 3; Indels 727; Gap Matches 509; Conservative 0; Mismatches 3; Indels 727; Gap Matches 509; Conservative 0; Mismatches 3; Indels 727; Gap Matches 509; Conservative 0; Mismatches 3; Indels 727; Gap	3TH: 1255 amino acids E: amino acid DLOGY: linear JLE TYPE: protein	COMMUNICATION INFORMATION: LEPHONE: (206) 622-4900 LEPAX: (206) 682-6031 ATION FOR SEQ ID NO: 2: ENCE CHARACTERISTICS:	CLASSIFICATION: 424 CLASSIFICATION: 424 ATTORNEY/AGENT INFORMATION: NAME: Sharkey, Richard G. REGISTRATION NUMBER: 32,629 REFERENCE/DOCKET NUMBER: 920010.448C7	OUTER: IBNATING SYSTEMARE: Pat WARE: Pat WAREICAT TAPPLICAT ICATION NU

1:

٠.

```
RESULT 5
US-08-468-545B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 68,
                                                                                                                                                                                     COUNIA...
ZIP: 98104-70>,
ZIP: 98104-70>,
COMPUTER READABLE FORM:
COMPUTER: Floppy disk
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
PC-DOS/MS-DOS
PC-DOS/MS-DOS
PC-10Ase #1.0,
                                                                                                          CURRENT APPLICATION DATA:
APPLICATION DATA:
APPLICATION UNMBER: US/08/468,545B
FILING DATE: 06-JUN-1995
CLASSIFICATION: 424
ATTORNEY/ACTION: 424
   TELEFAX: (206)
INFORMATION FOR SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                   C11.
STATE: Wal.
STATE: Wal.
COUNTRY: US
COUNTRY: 98104-7092
TTD: 98104-7092
                           REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 920
TELECOMMUNICATION INFORMATION:
TELECHPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1156
                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Cheever, Martin A. APPLICANT: Disis, Mary L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1036
                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       330
                                                                                                                                                                                                                                                                                                                      STREET: 6300 (CITY: Seattle
                                                                             NAME: Sharkey, Richard G. REGISTRATION NUMBER: 32,6
                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL 915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP 1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8, Application US/08468545B
5876712
                                                                                                                                                                                                                                                                                                        Washington
                                                                                                                                                                                                                                                                                                                                       6300 Columbia
                                                                                                                                                                                                                                                                                                                                                      Seed and Berry LLP
   ID NO:
                  682-6031
                                                                                                                                                                                                                                                                                                                                                                                                                 IMMUNE REACTIVITY TO HER-2/neu PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES
                                                                                                                                                                                                                                                                                                                                                                                       HER-2/neu ONCOGENE IS ASSOCIATED 69
                                                                                                                                                                                                                                                                                                                                       Center,
                                                                920010.448C5
                                                                                                                                                                                                                                                                                                                                       701 Fifth Avenue
                                                                                                                                                                                           Version
                                                                                                                                                                                           #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                    Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                      WHICH
                                                                                                                                                                                                                                                                                                                                                                                                                    THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; SEQUENCE CHARACTERISTICS:
; LENGTH: 1255 amino acid
; TYPE: amino acid
; TOPOLOGY: linear
US-08-468-545B-68
 밁
                          Ş
                                                              В
                                                                                          δã
                                                                                                                             밁
                                                                                                                                                       δÃ
                                                                                                                                                                                           밁
                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155 GLRELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
916 MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 975
                                                                856
                                                                                                                             796
                                                                                                                                                            330
                                                                                                                                                                                           736
                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                        616
                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                    496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  136
                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                          676
                                                                                                                                                                                                                                                                                                                                                                                     556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16 LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                              PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FLPESFDGDPASNTAPLOPEOLOVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375
                                                                                                                             LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 855
                                                                                                                                                                                                                                                        KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735
                                                                                                                                                                                                                                                                                                                        FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLV,VVLGVVFGILI 675
                                                                                                                                                                                                                                                                                                                                                                                     NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                           KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 795
                                                                                                                                                                                                                                                                                                                                                                                                                                               TANRPEDECYGEGLACHQLCARCHCWGPGPTQCVNCSQFLRGQECYEECRYLQGLPREYV 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64.3%;
ilarity 41.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 2405.5; DB 2
Pred. No. 4.8e-179;
D; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels 727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                              915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  195
                                                                                                                                                            329
                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94
```

ş

밁 ő ₽ 5 밁 S

В

밁

õ 밁 밁

ð 밁 ő В õ

S

388 KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG 44'	γo	AASTQVCTGTDMKLRLPASPETHLDMLRHLYOGGQVVOGNLELTYLPTNASLSFI	Ş
1036 APGAGGMYHHRHXSSSIRSGGGDLTLGLEPSEEAPRSPLAPSEGAGSDVFDGDLGMGAA 10	1: Db	Query Match 64.3%; Score 2405.5; DB 2; Length 1255; Best Local Similarity 41.1%; Pred. No. 4.8e-179; Matches 509; Conservative 0; Mismatches 3; Indels 727; Gaps	M B Q
-	Db	PE	us-c
330 32	Qy	amino acid Y: linear	•• ••
916 MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 97:	Db	SEQUENCE CHARACTERISTICS: LENGTH: 1255 amino acids	•• ••
330 32	Qy	TELEFAX: (617) 248-7100 INFORMATION FOR SEO ID NO: 2:	
856 PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL 91	Db	TELECOMMUNICATION INFORMATION: TELEPHONE: (617) 248-7000	
330 320	Qy	REGISTRATION NUMBER: 27,829 REFERENCE/DOCKET NUMBER: CRP-053	
796 LVTQLMPYGCLLDHVRENRGRLGSQDLLNMCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 85	. Db	er	
330 320	. Qy	APPLICATION NUMBER: 07/831,967 FILING DATE: 06-FER-1993	
736 KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 79	. Db	CLASSIFICATION: 424 PRIOR APPLICATION DATA:	·· •• ·
330 321	Qy	APPLICATION NUMBER: US/08/356,786 FILING DATE:	
676 KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 73	Db	SOFTWARE: PatentIn Release #1.0, Version #1.25	
330 32	оу	COMPUTER: IBM PC compatible	
616 FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI 67	рь	5 🖾	
330 321	Qy	COUNTRY: USA	
556 NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 61	Db	etts	·· ·· ·
330 32	Qy	ADDRESSEE: Edmund R. Pitcher, Testa, Hurwitz, & Thibeault STREET: Exchange Place, 53 State Street	
496 TANRPEDECYGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECYEECRYLQGLPREYV 55	Db	R OF SEQUENCES:	
330 32	Qy	NVENTION	
436 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 49	рь	APPLICANT: Houston, L.  APPLICANT: Houston, L.	
330 32	Qy	TINE CENT	
376 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 43	Db	DEVICE 1, APPLICATION 05/00350/00 PATENT INFORMATION.	
330 321	Qy	356-78 356-78	80-SD
316 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 37:	Db .		IVE S
330 321	Qy	1216 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254	Db
256 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC 31:	. Db	508 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546	Qy
275 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS 32	Qy	1156 PLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 1215	DЬ
196 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC 25	Db	448 PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 507	Qy
215 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC 27.	Qy	1096 KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG 1155	В
136 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC 19:	Db	388 KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG 447	Qy
155 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC 21	Qy	1036 APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 1095	B.
	dd	330GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 387	Qy
. 95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 15:	. · · · · · · · · · · · · · · · · · · ·	976 FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP 1035	망
	da da	330 329	Qy

```
Ş
                                   ₽
                                                             Ş
                                                                                                 밁
                                                                                                                              Ş
                                                                                                                                                                В
                                                                                                                                                                                         δ
                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 7
US-08-466-680B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                 US-08-466-680B-68
                                                                                                                                                                                                                                                                                              Query Match 64.3%;
Best Local Similarity 41.1%;
Matches 509; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 68:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 920
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.25 ...
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Cheever, Martin A. APPLICANT: Disis, Mary L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1096 KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG 1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                 196
   275
                                                                                                                                                                                                                               TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/466,680B FILING DATE: 06-JUN-1995 CLASSIFICATION: 424
                                                                                                                                                                                   95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Seattle
                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                  SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC 274
                                                                                                                                                                  DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
   LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3, Application US/08466680B 6075122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Washington
                                                                                                                                                                                                                                                                                                                                                                                                               1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ε: Seed and Berry LLP 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HER-2/neu ONCOGENE IS ASSOCIATED 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center,
                                                                                                                                                                                                                                                                                              Score 2405.5; DB 3;
Pred. No. 4.8e-179;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                920010.448C4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                              DB 3;
                                                                                                                                                                                                                                                                                              Indels 727; Gaps
                                                                                                                                                                                                                                                                                                                             Length 1255;
                                   255
                                                                                                                                                                                                                                                                                                 1:
RESULT 8
US-08-484-438-8
; Sequence 8, Application US/08484438
; Patent No. 5811098
; Patent No. 5811098 5780031
```

	٠.	AFDNLYYWDQDPPERGAPPSTEKGTPTAENPEYLGLDVP 546	508 1216	Db Dy
	507 :: 1215	PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP	448 1156	Qy Db
	447 1155	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG	388 1096	od
	387 1095	GAGGMVHHRHRSSTRSGGGDLTLGLEPSEEAPRSPLAPSEGAGSDVFDGDLGMGAA	330 1036	р, Qу
	1035		976	Db
	329		330	Qy
	975	MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE	916	DЬ
	329		330	Qy
	915	PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL	856	Db
	329		330	Qγ
•	855	LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS (	796	рь
٠.	329		330	Qy
-	795	KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ	736	DЬ
	329		330	Qy
	735	KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY	676	DB B
	329		330	Qy
	675	FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI (	616	Db
	329		330	ρy
	615	NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK (	556	Db
. •	329		330	Qy
	555	TANRPEDECVGEGLACHQLCARCHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV:	496	DЪ
	329		330	Qy
	495	LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH	436	Db
•	329		330	Qy
	435	FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI	376	DЬ
	329		330	Qy
	375	PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA	316	Дb
	329		330	Qy
•	315	LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC	256	р

```
Ş
                                                           ð
                                                                                             밁
                                                                                                                       Š
                                                                                                                                                            밁
                                                                                                                                                                                        S
                               밁
                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                        US-08-484-438-8
                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 509; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 56
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/981,165
FILING DATE: 24-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: un
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                215 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                            155 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
275 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                               196
                                                                                           136 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                      APPLICATION NUMBER: FILING DATE: 07-JUN CLASSIFICATION: 530
                                                                                                                                                                        95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 1255 amino acids
TYPE: amino acid
TYPE: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: 08/323,442
FILING DATE: 14-OCT-1994
APPLICATION NUMBER: US 08/150,704
FILING DATE: 10-NOV-1993
CIASCIFICATION: 530
                                                                                                                                                          76 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                             SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y: U.S.A.
10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INVENTION: HER4 HUMAN RECEPTOR TYROSINE KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Misrock,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (212) 869-8864/9741
                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hellstr m, Ingegerd
Hellstr m, Karl E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shoyab,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Culouscou,
                                                                                                                                                                                                                                                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            , Mohammed
l, Clay B.
                                                                                                                                                                                                                                                                                                        63.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gregory D.
u, Jean-Michel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08/484,438
                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                      Score 2385.5; DB 2;
Pred. No. 1.8e-177;
0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5624-230
                                                                                                                                                                                                                                                                                      Indels 729; Gaps
                                                                                                                                                                                                                                                                                                                     Length
                                                                                           195
                                                                                                                           214
                                                                                                                                                                                          154
329
                             255
                                                           274
                                                                                                                                                                                                                                                                                       Ψ
```

Db 316 PLHNOEVTAEDGTORCEKCSKPCARVCYGLGMEHLREVRAVTSANTOEFAGCKKIFGSLA  Db 316 PLHNOEVTAEDGTORCEKCSKPCARVCYGLGMEHLREVRAVTSANTOEFAGCKKIFGSLA  Qy 330
330 316 330 376 376 330 496 496 330 616 616 330 676 676 330 796 330 796 330 796 330 916 330 916 330 916 330 916 330 916 330 916 916 916 917 917 918 918 918 918 918 918 918 918 918 918
330 316 330 376 330 436 330 496 330 556 616 330 616 330 676 330 736 330 736 330 736 330 736 330 736 330 736 736 330
330 316 330 330 330 330 556 616 330 616 676 676 330 330 330 330 330 330 330 330 330 33
330 316 330 330 330 330 556 616 616 616 330 736 330 330 330 330 330 330 330 330
316 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGME 316 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGME 330
316 PLHNQEVTAEDGTORCEKCSKPCARVCYGLGME 316 PLHNQEVTAEDGTORCEKCSKPCARVCYGLGME 330
330
330
330
316 PLHNQEYTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAV 316 PLHNQEYTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAV 330
330
330
330
330
330
330
330
330
330
330
330 316 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRA 330
330
330 316 PLHNQEYTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRA 330
330 316 PLHNQEVTAEDGTQRCEKCSKPCARVCYG 330
330 316 PLHNQEVTAEDGTQRCEKCSKPCARVCYG 310 330 376 FLPESFDGDPASNTAPLQPEQLQVFETLE
33033303330
330316 PLHNQEVTAEDGTQRCEKCSKPCARVCYG
330

RESULT 9 US-09-146-283-4

Sequence 4, Application US/09146283 Patent No. 5976546 GENERAL INFORMATION:

```
Š
õ
                                   밁
                                                             õ
                                                                                                  밁
                                                                                                                               Ş
                                                                                                                                                                    밁
                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: homo sapiens; INDIVIDUAL ISOLATE: GM-CSF-Her-2 fusion protein; Fig. US-09-146-283-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: 650-324-0960 INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: p:
HYPOTHETICAL: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
STREET: 350 Cambridge Ave. Suite 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 76
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                   374
                                                                                                   314
                                                                                                                                   335
                                                                                                                                                                    256
                                                                                                                                                                                                    275
                                                                                                                                                                                                                                     196
                                                                                                                                                                                                                                                                       215
                                                                                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                                                                                                      155 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC 214
                                                                                                                                                                                                                                                                                                                                                                          76
                                                                                                                                                                                                                                                                                                                                                                                          95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 154
                                                                                                                                                                                                                                                                                                                                                                                                                                      16 LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                         35 LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Judge, Linda R. REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/09 FILING DATE: 03-SEPT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENGTH:
                                                                                                                                                                                  LHENHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGM 334
                               LAFLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRG 433
                                                                                                                                                                                                                                                                     SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC 274
                                                                                                                                                                                                                                                                                                      GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC 195
                                                                                                                                                                                                                                                                                                                                                                       DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 135
                                                                                                VCPLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGS
                                                                                                                                   VHHRHRSSSTRSGGGD----
                                                                                                                                                                 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCT--L 313
                                                                                                                                                                                                                                   SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                    ----SDVFDGD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            478;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : 782 amino acids amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Laus, Reiner
Ruegg, Curtis L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wu, Hongyu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              650-324-0880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    compatible
PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Immunostimulatory Compositions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/09/146;283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42,702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 2224; DI
Pred. No. 3.6e:
18; Mismatches
                                                                                                                                   -----LTLGLEPSEEEAPRSPLAPSEGAG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7636-0010.21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
3.6e-165;
PTH----DPSPLQRYSEDP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 782;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels 208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                  373
                                                                                                                                   374
                                                                                                                                                                                                                                   255
                                                                381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20;
```

```
RESULT 10
US-08-579-823A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4, Application US/08579823A Patent No. 6080409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                TELEFAX: 650-324-0960 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
REGISTRATION NUMBER: 42,
                               ORIGINAL SOURCE:
                                                MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 782 amino acids
                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     494 LHTANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPRE 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     434 RILHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQAL 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TLE OF INVENTION:
                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/0 FILING DATE: 03-DEC-1998
                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
                  ORGANISM:
                                                                             TOPOLOGY:
                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
ORGANISM: homo sapiens INDIVIDUAL ISOLATE: GM
                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --KGTPTAENPEYLGLDVPAAAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNET 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VEVISEMFDLQEPTCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQ 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EN----PEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGA-PPSTF------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IITFESFKENLKDFLLVIPFDCWEPVQE 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DDKGCPAEQRASPL---TSLEAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YVN-----QPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAV 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --TVPLPSET---DGYVAPLTCS----PQP---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DQCVACAHYKDPPFCVA----RCPSGVKPDLSYMPIW-KFPDEEGACQPCPINCTHSCVDL 637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YVNARHCLPCHPECOPO
                                                                                                                                                                                                                                                                                                                                                                                                                                    94306
                                                                                              amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  350 Cambridge Ave. Suite 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ruegg, Curtis L.
                                                                                                                                                                  650-324-0960
                                                                                                                                                                                                                                                                                                                                                                   IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Laus, Reiner
                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dehlinger & Associates
                                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hongyu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Immunostimulatory Composition and
GM-CSF-Her-2 fusion protein; Fig.
                                                                                                                                                                                                                                                                                                                   US/08/579,823A
                                                                                                                                                                                                                                42,702
                                                                                                                                                                                                                    7636-0010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    782
                                                                                                                                                                                                                                                                                                                                                  Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -NG---SVTCFGPEA 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      529
```

```
RESULT 11
US-09-344-195-4
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                           Sequence 4, Application Patent No. 6210662 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
                                                                                                                                                                                                                                             648 IITFESFKENLKDFLLVIPFDCWEPVQE 675
                                                                                                                                                                                                                                                                                           695
                                                                                                                                                                                                                                                                                                                                                                                                                      582
                                                                                                                                                                                                                                                                                                                                                                                                                                                  484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   215 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                              755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                155 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
   Wu, Hongyu
TITLE OF INVENTION: Immunostimulatory Compositions
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
                                                                                            APPLICANT: Laus, Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                  EN----PEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGA-PPSTF------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YVN-----QPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LHTANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LAFLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                          IITFESFKENLKDFLLVIPFDCWEPVQE 782
                                                                                                                                                                                                                                                                                        VEVISEMEDLQEPTCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQ
                                                                                                                                                                                                                                                                                                                      VEVISEMFDLQEPTCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQ
                                                                                                                                                                                                                                                                                                                                                       DDKGCPAEQRASPL---TSLEAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNET
                                                                                                                                                                                                                                                                                                                                                                                   -- KGTPTAENPEYLGLDVPAAAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RILHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQAL 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VCPLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VHHRHRSSSTRSGGGD------LTLGLEPSEEEAPRSPLAPSEGAG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGM 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                   DQCVACAHYKDPPFCVA---RCPSGVKPDLSYMPIW-KFPDEEGACQPCPINCTHSCVDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --TVPLPSET---DGYVAPLTCS-----PQP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
ADDRESS:
: Dehlinger &
                                                                                                                                           US/09344195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59.5%; Score 2224; DB 3; 59.2%; Pred. No. 3.6e-165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----NG---SVTCFGPEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 782;
                                                                                                                                                                                                                                                                                                                                                     694
                                                                                                                                                                                                                                                                                                                                                                                                                                                  529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20;
              В
                                           Ş
                                                                            밁
                                                                                                        Q
                                                                                                                                           몽
                                                                                                                                                                       8
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-344-195-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 478;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                           314
                                                                                                                                                                                                                          275 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGM
                                                                                                                                                                                                                                                                                                       215
                                                                                                                                                                                                                                                                                                                                      136
              434 RILHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFKNPHQAL
                                                                                                                                                                                                          256 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCT--L
                                                                                                                                                                                                                                                                                                                                                                    155
                                                                                                                                                                                                                                                                                                                                                                                                    76 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                 95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match 59.5%; Score 2224; DB 4; Local Similarity 59.2%; Pred. No. 3.6e-165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear MOLECULE TYPE: protein HYPOTHETICAL: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/09/146,283
FILING DATE: 03-SEPT-1998
ATTORNEY/AGENT INFORMATION:
NAME: Judge, Linda R.
REGISTRATION NUMBER: 42,702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/344,195
FILING DATE: 24-Jun-199
CLASSIFICATION: CUNKNOWN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: homo sapiens
INDIVIDUAL ISOLATE: GM-CSF-Her-2 fusion protein; Fig.
SEQUENCE DESCRIPTION: SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: 650-324-0880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                          VHHRHRSSSTRSGGGD-------LTLGLEPSEEEAPRSPLAPSEGAG-----
                                                                                                                                                                                                                                                                                          SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                     GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                            LAFLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRG
                                                                                                             ---SDVFDGD---
                                                                                                                                           VCPLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGS
                                                                                                                                                                                                                                                                         SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 350 Camb
CITY: Palo Alto
STATE: CA
COUNTRY: USA
                                            ------LGMGAA-KGLQSL------PTH----DPSPLQRYSEDP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: 650-324-0960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 782 amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          350 Cambridge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18; Mismatches 104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ave.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7636-0010.21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Suite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                             373
                                                                                                                                                                                                                                         334
                                                                                                                                                                                                                                                                                                                                      195
                                                                                                                                                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94
                                              408
                                                                                                             381
                                                                                                                                                                            374
                                                                                                                                                                                                            313
                                                                                                                                                                                                                                                                         255
                                                                                                                                                                                                                                                                                                        274
                                                                                                                                                                                                                                                                                                                                                                    214
                                                                                                                                                                                                                                                                                                                                                                                                    135
```

20;

154

135

-VPVPLRMQP 360 ·

255 274 195 214

```
S
                                                                                                                     SEQUENCE DESCRIPTION: SEQ ID NO: US-09-630-155-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
US-09-630-155-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/09630155
Patent No. 6414130
GENERAL INFORMATION:
APPLICANT: Doherty, Joni Kri
TITLE OF INVENTION: HER-2 BI
                                                                                               Query Match
                                                                Matches
                                                                                                                                                                                                                                          TELEFAX: 206 628-7699
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     530 --KGTPTAENPEYLGLDVPAAAPARSPSPSTOPWEHVNAIQEARRLLNLSRDTAAEMNET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  638 DDKGCPAEQRASPL---TSLEAPARSPSPSTQPWEHVNAIQEARRLINLSRDTAAEMNET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    409
                              ω
Ģ
                                                                               Local Similarity
 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
CORRESPONDENCE DAVIS WRIGHT TREMAINE LLP
ADDRESSEE: DAVIS WRIGHT TREMAINE LLP
ADDRESSEE: DAVIS WRIGHT TREMAINE LLP
                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION: TELEPHONE: 206 628-7621
                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                                                                                            TOPOLOGY:
               LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VEVISEMEDIQEPTCIQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DQCVACAHYKDPPFCVA---RCPSGVKPDLSYMPIW-KFPDEEGACQPCPINCTHSCVDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EN----PEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGA-PPSTF------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YVN-----QPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAV 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LHTANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPRE
                                                                318;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VEVISEMFDLQEPTCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YVNARHCLPCHPECQPQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  --TVPLPSET---DGYVAPLTCS-----PQP----
LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                                                                                                            TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                         NAME: Davison, Barry L.
REGISTRATION NUMBER: 47,309
REFERENCE/DOCKET NUMBER: 49
                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/09/630,155 FILING DATE: 16-Jan-2001 CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: Washington COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: PC compatible
                                                                                                                                                                                                                            LENGTH: 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: Windows95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OF SEQUENCES:
                                                                Conservative
                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Word
                                                                            43.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Joni Kristin and Gail M. (HER-2 BINDING ANTAGONISTS
                                                                9
                                                              Score 1607; DB 4;
Pred. No. 2e-117; ,
9; Mismatches 55;
                                                                                                                                                                                                                                                                                                                             49321-10
                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----SVTCFGPEA 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clinton
                                                                                           Length 419;
                                                              Indels
                                                              30;
                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  587
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    637
                                                              7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
US-08-422-108-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No. 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                            INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: WinPatin (Ger
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Hudziak, Robert M. APPLICANT: Shepard, H. Michael APPLICANT: Ullrich, Axel
                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Lee, Wendy M
REGISTRATION NUMBER: 00,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM: MEDIUM TYPE: 3.5 inch,
                                                                                                            TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: HER2 EXTRACELLULAR DOMAIN NUMBER OF SEQUENCES: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 GPAHPVLSFLRPSWDLVSAFYSLPLAPL-SPTSVPISPVSVGRGPD----PD 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                393 LPTHDPSPLQRYSED-----PTVPLPSETDGYVAPLTCSPQPEYVNQPD 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    314 VCPLHNQEVTAEDG---TQRCEKCSKPCARGTHSLLPRPAA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 76
                                                                                                                                                                                            APPLICATION NUMBER: FILING DATE: 19-MA
                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 08/3 FILING DATE: 13-DEC-1994
                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 95
                                                                            TELEFAX:
                                                                                             TELEPHONE:
                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: FILING DATE: 14-Apr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GLRELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VHHRHRSSSTRSGGGDLTLGLEPSEEEAPRS--PLAPSEGAGSDVFDGDLGMGAAKGLQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     South San Francisco
                                                              910/371-7168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/08422108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         California
                                                                              115/225-1994
415/952-9881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ullrich, Axel
                                                                                                                                                                                                                                                                                                                                                                                                         WinPatin (Genentech)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genentech,
                                                                                                                                                                                                                                           15-APR-1993
                                                                                                                                                                                                                                                                                                                                                          14-Apr-1995
                                                                                                                                                                                               19-MAY-1989
                                                                                                                                                                                                                                                                                                                                                                           US/08/422,108
                                                                                                                                                                                                               07/354319
                                                                                                                                                                                                                                                            08/048346
                                                                                                                                                                                                                                                                                                            08/355460
                                                                                                                                            00,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bruno Blvd
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.44 Mb floppy disk
                                                                                                                               554C2D2
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
US-08-422-734-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/08422734 Patent No. 6333169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                         FILING DATE: 15-APR-PRIOR APPLICATION DATA:
                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 14-Apr-
                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM: MEDIUM TYPE: 3.5 inch,
                                                                       PRIOR APPLICATION DATA:
                                                                                                                                                                                                             SOFTWARE: WinPatin (Ge
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 281 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHR 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         377 VFDGDLGMGAAKGLQSLPTHDPSPLQ 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                     COMPUTER: IBM PC
OPERATING SYSTEM:
                                          APPLICATION NUMBER: 08/0 FILING DATE: 15-APR-1993
                                                                                        FILING DATE:
                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                  STREET: 460 Point San Bru
CITY: South San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 100
                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                    COUNTRY:
FILING
               APPLICATION
                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 STOVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SFDGD-----PASNTAPLQ 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCT--LVCPLHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           308;
                                                                                                                                                                                                                                                                                                         94080
                                                                                                                                                                                                                                                                                                                                                                                                                            INVENTION:
                                                                                                                                                                                                                                                                                                                                     California
                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shepard,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hudziak,
                                                                                                                                                                                                                                          IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Linear
              NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                Genentech,
                                                                                                                 14-Apr-1995
                                                                                      13-DEC-1994
19-MAY-1989
                                                                                                                                                                                                                                                                                                                                                                                                                            HER2 EXTRACELLULAR DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         42.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Axel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Robert M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         H. Michael
                                                                                                      08/355460
                                                          08/048346
                                                                                                                                   08/422108
                                                                                                                                                                                                                           (Genentech)
              07/354319
                                                                                                                                                                                               US/08/422,734
                                                                                                                                                                                                                                                                                                                                                                Bruno Blvd
                                                                                                                                                                                                                                                                      1.44 Mb floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1597; DB 3; Pred. No. 2.1e-116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 624;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.
```

Sequence 69, Patent No. 5

5801005

Application US/08414417B

GENERAL INFORMATION:

APPLICANT:

Cheever, Marti Disis, Mary L.

Martin A.

TITLE OF INVENTION: TITLE OF INVENTION:

IMMUNE REACTIVITY TO HER-2/neu PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES

Ï

WHICH

HER-2/neu ONCOGENE IS ASSOCIATED

NUMBER OF SEQUENCES:

CORRESPONDENCE ADDRESS:
ADDRESSEE: Seed and Berry LLP

701 Fifth Avenue

STREET: 6300 C

COUNTRY:

6300 Columbia Seattle Washington

98104-7092

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0,
CURRENT APPLICATION DATA:

US/08/414,417B

Version

#1.25

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                           Ş
                                                                                                                                                В
                                                                                                                                                                                   Ş
                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                                                                                         B
RESULT 15
US-08-414-417B-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-422-734-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity Matches 308; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 415/952-9881
TELEX: 910/371-7168
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101 GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ 160
                                                                    359 SFDGD------PASNTAPLO 372
                                                                                                             377 VFDGDLGMGAAKGLQSLPTHDPSPLQ 402
                                                                                                                                              299 QEVTAEDGTORCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPE 358
                                                                                                                                                                                   341 SSSTRSGGGD------LTLGLEPSEEEAPRSPLAPSEGAG-----SD
                                                                                                                                                                                                                       241 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCT--LVCPLHN 298
                                                                                                                                                                                                                                            281 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHR 340
                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                      221
                                                                                                                                                                                                                                                                                                                                                                                           161 LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASI.SFLQDIQEVQ 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: Amino Acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQ 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                    SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                         LRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKG
                                                                                                                                                                                                                                                                                                 SRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHS
                                                                                                                                                                                                                                                                                                                                                                                                                                               GYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   624 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42.78;
79.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  00,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ο,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  554C2D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1597; DB 4; Pred. No. 2.1e-116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 624;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      38;
                                                                                                                                                                                     376
                                                                                                                                                                                                                                                                                                                                    280
                                                                                                                                                                                                                                                                                                                                                                                                            220
                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                         180
```

```
Ş
                                                                                                                                                             밁
                                                      ₽
                                                                              á
                                                                                                          8
                                                                                                                                                                                                                                                                     ;
US-08-414-417B-69
                                                                                                                                                                                                                                                                                           TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 69
SEQUENCE CHARACTERISTICS:
LENGTH: 580 amino acids
TYPE: amino acid
STRANDENESS:
                                                                                                                                                                                                              Query Match 31.6%;
Best Local Similarity 95.6%;
Matches 219; Conservative
                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 920010.448C2
                                                                                                                                                           378 FDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDV 437
                                                                                                        411 FDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDV 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 31-MAR-1995
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                     69:
                                                                                                                                                                                                              Score 1183; DB 1;
Pred. No. 3.8e-84;
0; Mismatches 4;
                                                                                                                                                                                                                4; Indels
                                                                                                                                                                                                                                         Length 580;
                                                                                                                                                                                                                6;
                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                <u>,</u>
```

Search completed: April 28, 2003, 13:43:11 Job time: 34.1923.secs

THIS PAGE BLANK (USPTO)

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2124.5
1609.5
                                         969
900.5
754.5
757.5
717.5
717.5
717.5
717.5
714.5
704.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPTREMBL_21:*
1: sp_archea:*
2: sp_bacteria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               April 28, 2003, 13:37:49 ; Search time 46.1538 Seconds (without alignments) 3080.404 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      671580 seqs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MRAAPLLLARAASLSLGFLF......EPVQEGAPPPPAAAHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-821-883-2
3739
       56.8
43.0
24.2
224.1
220.2
220.2
220.2
119.3
119.2
119.2
117.8
117.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_organelle:*
sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_fung1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length DB
       655
1210
1209
478
331
1165
144
                                                                                                                                                                                                                                                                                                     149
01425

01425

02425

08WYV0

090836

090866

1 09EP98

1 09EP98

1 09EP98

1 09EXP0

0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           018735
Q9UK79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                              O90836 gallus gall
O90836 oryctolagus
O90276 mus musculu
O90298 mus musculu
O90298 mus musculu
O90270 rattus norv
O90207 homo sapien
O904144 macaca mula
                                                                                                                                                                                                                                                                                                                                                                                                     O18735 canis famil
O9uk79 homo sapien
O8ur2x1 mus musculu
Q14256 homo sapien
O8wyv0 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
       Q9psh2 gallus gall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \begin{array}{c} 117 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\ 127 \\
```

8 6.4 469 11 Q63721 Q63721	.6 1368 13 Q8UW85 Q8uw85	6 6.8 1369 13 Q8UW86 Q8uw86	6.5 6.9 1362 13 Q9PVZ4 . Q9pvz4	6.9 1412 13 Q8UW84 28uw84	7.0 1358 13 073798 073798	7.2 2144 5 Q9VD94 Q9vd94 d	7.3 1418 13 093457 093457	7.3 1418 13 Q8UW83 Q8uw83	7.3 89 11 088459 088459	7.3 1749 5 Q8T0W6 . Q8t0W6	7.7 · 1671 5 Q9NJV5 Q9njv5	7.8 1472 5 Q9U5A8 Q9u5a8	8.7 1193 5 Q9Y1X8 Q9Y1X8	8.9 342 5 Q26568 Q26568	8.9 334 5 Q26567 Q26567	9.1 1717 5 Q26566 Q26566	9.1 366 5 Q26569 Q26569	9.7 138 11 Q99J91 Q99J91	10.1 1368 5 Q23821 Q23821	10.6 151 6 Q9BG65 Q9bg65	10.6 150 6 Q9BG64 Q9bg64	10.9 1137 13 Q9W6F6 . Q9w6F6	11.4 141 11 Q8VH40 Q8vh40	13.8 152 6 Q95L10 Q95110	14.1 146 6 Q8WN17 Q8wn17	14.5 1433 5 Q9BIH9 Q9bih9	14.6 144 6 Q9MYK4 Q9myk4 c	HOLD HORD TO STUDY
1	5	σ	4	28uw84 paralichthy	w	ο.	7	w	ဖ						Q26567 schistosoma	Q26566 schistosoma	Q26569 schistosoma	Q99j91 marmota mon	Q23821 caenorhabdi	Q9bg65 oryctolagus	pryctola	Q9w6f6 gallus gall	sigmod:	Q95110 equus cabal	Q8wn17 equus cabal	anophe	ovis a	1000

## ALIGNMENTS

```
Ş
                                                                                                           Ş
                                                                                                                                                                                                                                                  õ
Š
              밁
                          S
                                         ₽
                                                                     밁
                                                                                 Ş
                                                                                               В
                                                                                                                          망
                                                                                                                                     S
                                                                                                                                                       밁
                                                                                                                                                                 Ş
                                                                                                                                                                                 В
                                                                                                                                                                                           õ
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 56.8
Best Local Similarity 36.7
Matches 460; Conservative
  330
               966
                                                                     846
                                                                                                                                          330
                                                                                                                                                       666
                                                                                                                                                                                                330
                                                                                                                                                                                                            546
                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                  426
                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                           330
                                                                                                                                                                                                                                                                                                                                                                                                      330
                                          906
                                                                                                786
                                                                                                                           726
                                                                                                                                                                                  909
                                                                                                                                                                                                                                       486
                                                                                                                                                                                                                                                                                              366
                                                                                                                                                                                                                                                                                                                        306
                                                                                                                                                                                                                                                                                                                                      325
                                                                                                                                                                                                                                                                                                                                                   246
                                                                                                                                                                                                                                                                                                                                                                265
                                                                                                                                                                                                                                                                                                                                                                              186
                                                                                                                                                                                                                                                                                                                                                                                           205
                                                                                                                                                                                                                                                                                                                                                                                                                                   66
                                                                                                                                                                                                                                                                                                                                                                                                                                                 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                            THRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCT
             {\tt PRFRELVAEFSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVP}
                                         SYGVTVWELMTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECR
                                                                     AARNVLVKSPNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESIPPRRFTHQSDVW
                                                                                               GICLTSTVQLVTQLMPYGCLLDHVREHRGRLGSQDLLNWCVQIAKGMSYLEDVRLVHRDL
                                                                                                                           GSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLL
                                                                                                                                                      VGLVLGILIKRRRQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVL
                                                                                                                                                                                 DLSFMPIWKFADEEGTCQPCPINCTHSCADLDEKGCPAEQRASPVTSIIAAVVGILLAVV
                                                                                                                                                                                                                                                                                            GCKKIFGSLAFLPESFDGDPASNTAPLQPEQLRVFEALEEITGYLYISAWPDSLPNLSVF
                                                                                                                                                                                                                                                                                                                        TDVGSCTLVCPLNNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFA
                                                                                                                                                                                                                                                                                                                                     TDVGS-----
                                                                                                                                                                                                                                                                                                                                                                            THRESACPPCSPACKDAHCWGASSGDCQSLTRTVCAGGCARCKGPQPTDCCHEQCAAGCT
                                                                                                                                                                                                            LQGLPREYVKDRYCLPCHSECQPQNGSVTCFGSEADQCVACAHYKDPPFCVARCPSGVKP
                                                                                                                                                                                                                                      FRNPHQALLHSANRPEEECVGEGLACYPCAHGHCWGPGPTQCVNCSQFLRGQECVEECRV
                                                                                                                                                                                                                                                                 QNLRVIRGRVLHDGAYSLTLQGLGISWLGLRSLRELGSGLALIHRNARLCFVHTVPWDQL
GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       56.8%; Score 2124.5; DB 6; 36.7%; Pred. No. 1e-149; tive 18; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                           .........
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                         965
                                                                     905
                                                                                                845
                                                                                                                                                       725
                                                                                                                                                                    329
                                                                                                                                                                                 665
                                                                                                                                                                                              329
                                                                                                                                                                                                            605
                                                                                                                                                                                                                                       545
                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                 485
                                                                                                                                                                                                                                                                                            425
                                                                                                                                                                                                                                                                                                                        365
                                                                                                                                                                                                                                                                                                                                                  305
                                                                                                                                                                                                                                                                                                                                                               324
                                                                                                                                                                                                                                                                                                                                                                            245
                                                                                                                                                                                                                                                                                                                                                                                          264
                                                                                                                                                                                                                                                                                                                                                                                                        185
                                                                                                                                                                                                                                                                                                                                                                                                                     204
                                                                                                                                                                                                                                                                                                                                                                                                                                  125
                                                                                                                                                                                                                                                                                                                                                                                                                                                144
                                                                                                                                                                                                                                                                                                                                                                                                                                                             65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84
                                                       329
                                                                                   329
                                                                                                                                         329
                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                Ş
Š
             망
                        5
                                        B
                                                                    망
                                                                                Ş
                                                                                               B
                                                                                                            Š
                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                         Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
```

```
Query Match
Best Local S
Matches 318
                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Doherty J.K., Clinton G.M., Adelman J
Submitted (SEP-2000) to the EMBL/GenB.
EMBL; AP17761; AAD56009-2; .

InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR002174; Furin-11ke.
Pfam; PF00757; Furin-11ke; 1.
Pfam; PF01030; Recep_L_domain; 1.
SMART; SM00261; FU; 1.

SMART; SM00261; FU; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAY-2000
01-MAR-2001
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.

MEDITINE-99415951; PubMed-10485918;

Doherty J.K., Bond C., Jardim A., Adelman J.P., Clinton G.M.;

"The HER-2/neu receptor tyrosine kinase gene encodes a secreted autoinhibitor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9UK79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9UK79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Proc. Natl. Acad. Sci. U.S.A. 96:10869-10874(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Herstatin
                                                                                                                 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       494
                                                                                     196
                                                                                                                                             136
                                                                                                                                                                                                   76
                                                                                                                                                                                                                               95
                                                                                                                                                                                                                                                          16
                                                                                                                                                                                                                                                                                      ω
5
                                                                                                                                                                                                                                                                                                                  Local Similarity 74.3 hes 318; Conservative
                                          LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGM
                                                                                  VHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQGFFCPEPTPGAGGTAHRRHRSSSTRNGGGELTLGLEPSEEEPPKSPLAPSEGAGSDVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DGDLGMGAAKGLQSLPSQDPSPLQRYSEDPTVPLPPETDGKVAPLTCSPQPEYVNQPEVW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TrEMBLrel. 13, (TrEMBLrel. 16, (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                          45472 MW; FEC1BE347E2D030C CRC64;
                                                                                                                                                                                                                                                                                                                              43.08;
                                                                                                                                                                                                                                                                                                                Score 1609.5; DB 4;
Pred. No. 6.2e-112;
7; Mismatches 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Adelman J.P., Evans A.J., Henner EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .≵
                                                                                                                                                                                                                                                                                                                                              DB 4;
                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                               419;
                                                                                                                                                                                                                                                                                                                   61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Σ
                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1145
                                                                                                                                              195
                                                                                                                                                                                                     135
                                                                                                                                                                                                                               154
                                                                                                                                                                                                                                                           75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1085
  394
                              313
                                                         334
                                                                                     255
                                                                                                                 274
                                                                                                                                                                                                                                                                                                                   7;
```

```
RESULTION RESULTION RESULTION REPORT TO THE PROPERTY OF THE PR
9142516 ID 2246 ID 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 180; Conserv
                                                                                                                                                                                                                                                                                                                                                                    O14256 PRELIMINARY; PRT; 165 AA.
Q14256; PRELIMINARY; PRT; 165 AA.
Q14256; Q1-NOV-1996 (TrEMBLrel. O1, Created)
O1-NOV-1996 (TrEMBLrel. O1, Last sequence update)
O1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
C-erb B2/neu protein (Fragment).
C-ERB B2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Strausberg R.;
Submitted (APR-2002) to the
EMBL; BC027008.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OBR2X1 PRELIMINARY;
OBR2X1; PRELIMINARY;
01-JUN-2002 (TrEMBLrel. 21,
01-JUN-2002 (TrEMBLrel. 21,
01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                      Teru 2
C-ERB B2
Homo sapiens (Human).
Homo sapiens (Human).
Horia; Chordata;
Horia; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hypothetical 40.2 kDa protein. Mus musculus (Mouse). Eukaryota, Metazoa; Chordata; (Mammalia; Eutheria; Rodentia; (
                           SEQUENCE FROM N.A.

MEDLINE-86070181; PubMed-2999974;

Coussens L., Yang-Feng T.L., Liao Y.C., Chen E., Gray A
Seeburg P.H., Libermann T.A., Schlessinger J., Francke
Seeburg P.H., Libermann T.A., Schlessinger J., Francke
                                                                                                                                                                                                                                   NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hypothetical protein SEQUENCE 367 AA; 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PSPREGPL /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPAFSPAFDNLYYWDQNSSEQGPPPSTFEGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LSPTSVPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---PRP-----AAVPV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           THDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VCPLHNQEVTAEDG - - - TQRCEKCSKP - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      449
receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40163 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 969; DB 11;
Pred. No. 3.1e-64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                      Craniata; Vertebrata; I Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OBE03395F9E101B0 CRC64;
extensive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PLRMQPGPAHPVLSFLRPSWDLVSAFYSLPLAP 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 11;
homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                  Gray A.,
rancke U.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 367;
ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                366
                                                                                                                                                                                                                                                                                                         Euteleostomi;
EGF
                                                                                                                                                                                                                                                                         Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -CARGTHSLP 346
                                                                                                 McGrath
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
RESULT 5
Q8WYV0
 Вр
                  δÃ
                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NON_TER
SEQUENCE
                                                                                ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00219; TyrKc; 1.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS50011; PROTEIN_KINASE_DOM;
Hypothetical protein.
SEQUENCE 412 AA; 44702 MW; 034397F
                                                                                                                                                                                                                                                                                          P3659.
Homo sapiens (Human).
Homo sapiens (Human).
Thervota; Metazoa; Chordata; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
MEDLINE-94000386; PubMed-8104414;
Sarkar F.H., Ball D.E., Li Y.W., Crissman
                                                                                                                                                                                              Submitted (NOV-2000) to the EMBL; AF318349; AAL55856.1; InterPro; IPR002048; EF-hand
                                                                                                                                                                                                                                                                                                                                           01-MAR-2002 (TrEMBLrel. 20, Created)
01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-UN-2002 (TrEMBLrel. 21, Last annotation updat
Hypothetical 44.7 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sarkar F.H., Ball D.E., Li Y.W., (
                                                                                                                                             Pfam; PF00069; pkinase; Pfam; PF02757; YLP; 2.
                                                                                                                                                                                                                             growth.";
                                                                                                                                                                                                                                                 Huang Y., Zhou
Wan D.F., Gu J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     shares chromosomal location with neu Science 230:1132-1139(1985).
                                                                                                                                                                 InterPro; IPR001245; Tyr_InterPro; IPR004019; YLP_
                                                                                                                                                                                                                                        "Novel human cDNA
                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                     Q8WYV0;
                                                                                                                                                                                                                                                                                                                                                                                               OAXM8Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA Cell Biol. 12:611-615(1993).
                                                                                                                                                                                    InterPro; IPR000719;
                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    373
  142
                      322
                                          hes 183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
mes 165; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAEN
GGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NOPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQ 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   M95667; AAC37531.1;
                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 165 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24.2%;
llarity 100.0%;
Conservative
                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                   .R ×
                                                                                                                                                                                                                                       clones with function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17327 MW;
                                                  24.18;
75.38;
                                                                                                                                                                          Euk_pkinase.
Tyr_pkinase.
                                                                                                                                                                                                EF-hand.
                                                                                                                                                                                                                                                          Zhang P.P.,
                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                        Score 900.5;
Pred. No. 4.7e
6; Mismatches
                                                                                                                                                                                                                    EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 906; DB 4;
Pred. No. 5.4e-60;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Catarrhini; Hominidae,
                                                                                  034397FF3F27D2BC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A0C113BA308BF46B
                                                                                                                                                                                                                                                          Jiang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    an
                                                                                                                                                                                                                                                                                                                                                                                               412
                                                                                                                                                                                                                                       of
                                                   4.7e-59;
                                                                                                                                                                                                                                                          H.Q.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    intron
                                                                                                                                                                                                                                                                                                                                                                                              ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J.D.
                                                                                                                                                                                                                                      inhibiting
                                                                                                                                                                                                                                                                                                    Hominidae;
                                                              В
                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                            Qin
                                          30;
                                                            4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ō,
                                                                                 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                                                                                                                                                                                                                                                            W.X.,
                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Her-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     537
                                                                                                                                                                                                                                                                                                                                                                                                                                                 165
                                                                                                                                                                                                                                                                                                              Eutelecstom1;
                                                                                                                                                                                                                                       cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             165
                                                              412;
                                          24;
                                                                                                                                                                                                                                        cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (ERBB2)
                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    432
201
                     381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

ş

LGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQP

```
ORESULT
ORESUL
                                                                                                                       δ
                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                    S
                                    ð
                                                                                     밁
                                                                                                                                                                          용
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-92123214; PubMed-1732751;
Flickinger T.W., Maihle N.J., Kung
Flickinger T.W., processed mRNA fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
EGF/TGF-alpha receptor precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q90836;
Q90836;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   dependent transformation.";
Mol. Cell. Biol. 12:883-893(1992).
EMBL; M77637; AAA48759.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "An alternatively processed mRNA from the soluble, truncated form of the receptor denominant transformation ":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gâllus gallus (Chicken).
Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR002174; Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Archosauria;
                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    442
                                                                                     184
                                                                                                                                                                            134
                                                                                                                                                                                                                        139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   202
                                                                                                                                                                                                                                                                  74
                                                                                                                                                                                                                                                                                                             79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                       18
                                                                                                                                                                                                                                                                                                                                                                                                   19
                                                                                                                                                                                                                                                             WVW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QPW
                  EQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVT
                                                                                                                                                                                                                                                                                                                                                     LVLLLLLGRVALCS----AVEEKKVCQGTNNKLTQLGHVEDHFTSLQRMYNNCEVVLSN
                                                                                                                                                                                                                                                                                                                                                                            LFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQP
                                                                                                          ALTILID-THNSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCH
                                                                                                                                                                            YH-MNKTQ--
                                                                                                                                                                                                 NQCAAGCTGPRESDCLACRKFRDDATCKDTCPPLVLYNPTTYQMDVNPEGKYSFGATCVR
                                                                                     PLTVLDFASNLSSCPKCHPNCTEDHCWGAGEQNCQTLTKVICAQQCSGRCRGKVPSDCCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PTLLLPS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PPAFSPAFONLYYWDQDPPERGAPPST--FKGTPTAENPEYLGL-DVPAAAPARSPSPST
                                                                                                                                                                                                                                                                                                                                                                                                                                              160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PF01030; Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PF00757; Furin-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SM00261; FU;
                                                                                                                                                                                                                                                                                                                                                                                                                                          h 20.2%;
Similarity 42.4%;
60; Conservative 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29
527 ‡
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Aves:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
527
58353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Neognathae;
                                                                                                                                                                            -GLRELPMKRLSEILNGGVKISNNPKLCNMDTVLWNDIIDTSRK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ME;
                                                                                                                                                                                                                                                                                                                                                                                                                                            56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AQPSTTSITGTRTHQSG--
                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 754.5; DB
Pred. No. 5e-48;
6; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL.
EGF/TGF-ALPHA RECEPTOR.
; 764564ABCC095298 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Euteleostomi;
; Galliformes; Phasianidae; Phasiani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   avian c-erbB
hat can block
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                            126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -GLHPAPSKGHLRQRTQST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene encodes
ligand-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                  243
                                                                                                                                                                            183
                                                                                                                                                                                                                                                                                                                                                       73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                261
                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
```

ì

```
RESULT
Q9ERV6
      RRAR RRAR RAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCOMPAND DE STEER PRANCOCCIOR DE STEER PRANCOCCIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                OJERV6;
01-MAR-2001 (TrEMBLrel. 16
01-MAR-2001 (TrEMBLrel. 16
01-JUN-2002 (TrEMBLrel. 2
Epidermal growth factor r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kinase.
NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         peri-implantation rabbit uterus and blastocyst." Submitted (JAN-2001) to the EMBL/GenBank/DDBJ dat EMBL; AF333178; AAK14371.; ... InterPro; IPR002174; Furin-like. Pfam; PF00757; Furin-like; 1. SMART; SM00261: Ff1. 2
SEQUENCE FROM N.A.
STRAIN-C3H/101, 129/SVJ, AND 129/SVEVTAC;
Reiter J.L., Threadgill D.W., Eley G.D., Strunk K.
Sinclair C.S., Pearsall R.S., Green P.J., Yee D.,
Balasubramaniam S., Crossley T.O., Magnuson T.R.,
                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Mammalia; Eutheria; NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata;
Mammalia; Eutheria; Lagomorpha; Leporid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence up
01-OCT-2001 (TrEMBLrel. 18, Last annotation
Receptor tyrosine kinase ErbB2 (Fragment).
                                                                                                                                                                                                                                                                                                                                           Q9ERV6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Klonisch T., Wolf P.,
Tetens F., Fischer B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. Klonisch T., Wolf P.,
                                                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9BG66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9BG66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               304
                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        317
                                                                                                                                                                                                                                                                                                                                                                                   æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TFESMPNPEGRYTFGASCYTTCPYNYLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TFESMPNPEGRYTFGASCVTACPYNYLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VCNG-IGIGELKGILSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VFDGDLGMGAAKGLQSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NPQFCYQDTILWQEFSTRTTSWPSTRINASRARTCPPCSPACQASGCWGESPEDCQSLTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                 s (Mouse).
Metazoa; Chordata; C
Metazoa; Rodentia; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1
149
149 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1
149
: 16240 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hombach-Klonisch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                    16, Created)
16, Last sequence 21, Last annothing receptor isof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 723; DB 6; 1
Pred. No. 2.1e-46;
8; Mismatches 20;
                                                                                                                                                   Craniata; Vertebrata; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7CB3792A54FC49BA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Leporidae;
                                                                                                                                                                                                                                      sequence update) annotation updat isoform 2.
                                                                                                                                                                                                                                                                                                                                             643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Vertebrata;
                                                                                                                                                                                                                                                                                                                                             ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vogt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --YEVEENGVRK-CKKCDGLCSK 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Oryctolagus
                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                s.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        like ligands
      K.E., Danielsen &
, Lampland A.L.,
, James C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels .,
                                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kuechenhoff A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Euteleostomi;
                                                                                                                                                     Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'n
                                                                                                                                                       Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
OPWVF5
OPWVF5
OPWVF5
I O1-WOV-1999 (TrEMBLrel. 12,
JT O1-UN-2002 (TrEMBLrel. 21
DT O1-UN-2002 (TrEMBLrel. 21
DE Epidermal growth factor resolutions)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RATE OF THE SECOND SECO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 19.3
Best Local Similarity 46.8
Matches 141; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AF275366; AAG28046.1; JOINED.
EMBL; AF275364; AAG28046.1; JOINED.
EMBL; AF275365; AAG28046.1; JOINED.
MGD; MGI:95294; EGfr.
InterPro; IPR000345; CytC_heme_bind.
InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR002174; Furin-like.
                                                                                                            STRAIN-C57BL/6J; TISSUE-LIVER; Reiter J.L., Threadgill D.W., Danielsen A.J., Scho Lampland A.L., Balasubramaniam S., Crossley T.O., Maihle N.J.;
                                                                                                                                                                                                                                                                    Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00757; Furin-like; 1. Pfam; PF01030; Recep_L_domain; 2.
    SEQUENCE FROM N.A.
                                           Carboxy-Terminal Tru
Submitted (JAN-1999)
                                                                                     "Alternative Transcripts from the Human and Mouse
                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                               NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Receptor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMART; SM00261; FU;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (JUN-2000) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 isoforms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Maihle N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'Comparative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGALEEKKVCQGTSNRLTQLGTFEDHFLSLQRMYNNCEVVLGNLEITYVQRNYDLSFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ARGAA - - STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKH 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGLRELPMRNLQEILIGAVRFSNNPILCNMDTIQWRDIVQNVFMSNMSMDL----QSHPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SDCLVCQKFQDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SCPKCDPSCPNGSCWGGGEENCQKLTKIICAQQCSHRCRGRSPSDCCHNQCAAGCTGPRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PS00190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                     Truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOCHROME_C; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mic sequence analysis and isolation Egfr transcripts encoding truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71476 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19.2%; Score 717.5;
46.8%; Pred. No. 3.86
tive 39; Mismatches
                                                6
                                                                                                                                                                                                                                                                                                                                                                     12, Created)
12, Last sequence update)
21, Last annotation update)
receptor (Epidermal growth
                                              the
                                       Receptors.";
e EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                    Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEF22002C84911B1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               encoding truncated receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .8e-45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100;
                                                                                                                                                        Schell
                                                                                         EGFR Genes Encode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                   Magnuson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                   factor
                                                                                                                                                                                                                                                                    Euteleostomi;
; Murinae; Mus
                                                                                                                                                        c.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of human
                                                                                                                                                                                                                                                                                                                                                                                receptor
                                                                                                                                        н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ū
```

```
δÃ
                                                                                                           Вb
                                                                                                                                                          δ
                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
     밁
                                                                                                                                                                                                                   뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kasukawa T., Saito R.,
RA Alzawa K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Szuzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boifelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Lee N.H.,
RA Lyons P., Marchionni L., Mashina J., Mazzarelli J., Mombaerts P.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashina J., Mazzarelli J., Mombaerts P.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AF124513; AAD44149.1; EMBL; AF275366; AAG28047.1; J EMBL; AF275365; AAG28047.1; J EMBL; AF275365; AAG28047.1; J EMBL; AK004944; BAB23688.1; EMBL; AK004984; BAB23662.1; EMBL; AK004911; BAB236641; EMBL; AK004911; BAB23641; EMBL; AK004911; BAB23641; EMBL; AK0491; EMBL; AK004911; EMBL; AK04914; AK0491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-C3H/101, 129/SVJ, AND 129/SVETTAC;
Reiter J.L., Threadgill D.W., Eley G.D., Strunk K.E., Daniels
Sinclair C.S., Pearsall R.S., Green P.J., Yee D., Lampland A.,
Balasubramaniam S., Crossley T.O., Magnuson T.R., James C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMART; SM00261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00757; Pfam; PF01030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hayashizaki Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kawai J., Shinagawa A., Shibata K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-21085660;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-C57BL/6J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mouse alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Maihle N.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000494; EGFR_L_domain
InterPro; IPR002174; Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nature 409:685-690(2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Functional annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 isoforms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Comparative genomic
                                                         269
                                                                                                              186
                                                                                                                                                                  210
                                                                                                                                                                                                                      130
                                                                                                                                                                                                                                                                        154
                                                                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                                                                                              94
                                                                                                                                                                                                                                                                                                                                                                                                                                                              36 ARGAA--STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFL
                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                                                                                                                                 SDCLVCQKFQDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHG
                                                    SDCLACLHENHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACFYNYLSTDVG
                                                                                                           SCPKCDPSCPNGSCWGGGEENCQKLTKIICAQQCSHRCRGRSPSDCCHNQCAAGCTGPRE
                                                                                                                                         ACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKH
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGALEEKKVCQGTSNRLTQLGTFEDHFLSLQRMYNNCEVVLGNLEITYVQRNYDLSFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (JUN-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              655 · AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Furin-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FU;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=LIVER; pubMed=11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mic sequence analysis and 
Egfr transcripts encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                72906 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of a full-length mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 3.9e
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 717.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6B34063B1BC928CB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yoshino M., Itoh M., Isi...
H., Adachi J., Fukuda S., Yamanaka I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .9e-45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  isolation of human and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         truncated receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Danielsen A.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;;;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 K. -F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                              153
                                                                                                                                                                                                                                                                                                                                                                                                                                       79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93
        305
                                                         328
                                                                                                              245
                                                                                                                                                                  268
                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                        209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ÿ
```

Ş

329

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                    Query Match
Best Local S
Matches 141
                                                                          SMART; SM00261; FU; 5.

SMART; SM00220; S_TKC; 1.

SMART; SM00219; TyrKC; 1.

PROSITE; PS00190; CYTOCHROME_C; UNKNOWN_1.

PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS001019; PROTEIN_KINASE_TYR; 1.

PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.

ATP-binding; Receptor; Transferase.

SEQUENCE 1210 AA; 134840 MW; 62CD021C9DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9EP98;
Q1-MAR-2001 (TrEMBLrel. 16, Create
Q1-MAR-2001 (TrEMBLrel. 16, Last;
Q1-JUN-2002 (TrEMBLrel. 21, Last
Epidermal growth factor receptor
                                                                                                                                                                                                                                                            InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                         EMBL;
EMBL;
EMBL;
                                                                                                                                                                            ProDom; PD000001; Euk_pkinase; SMART; SM00261; FU; 5.
                                                                                                                                                                                                  Pfam; PF00069; pkinase; 1.
Pfam; PF01030; Recep_L_domain;
PRINTS; PR00109; TYRKINASE.
                                                                                                                                                                                                                                      Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Reiter J.L., Threadgill D.W., Eley G.D., Strunk K.E., I
Schehl C., Pearsall R.S., Green P.J., Yee D., Lampland
Balasubramaniam S., Crossley T.O., Magnuson T.R., James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. STRAIN-C57BL/6J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-C3H/101, 129/SVJ, AND 129/SVEVTAC;
Reiter J.L., Threadgill D.W., Eley G.D., Strunk K.E., Danielsen
Sinclair C.S., Pearsall R.S., Green P.J., Yee D., Lampland A.L.,
Balasubramaniam S., Crossley T.O., Magnuson T.R., James C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                        Submitted (JUN-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (JUN-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mouse alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9EP98
                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                       MGD;
                                                                                                                                                                                                                                                                                                                                                                                                             mouse alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                     Maihle N.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Comparative genomic sequence analysis and isolation of human and mouse alternative Egfr transcripts encoding truncated receptor
                                                                                                                                                                                                                                                                                                                                                                                                   isoforms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              isoforms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maihle N.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                         Comparative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        306
               36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
                                                                                                                                                                                                                                                                                           P; P11362; 1FGK.
; MGI:95294; Egfr.
erPro; IPR000345; (
erPro; IPR000494; [
ARGAA--STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        თ — თ
                                                                                                                                                                                                                                                                                                                                                                          AF275366; AAG28045
                                                                                                                                                                                                                                    PF00757; Furin-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        306
                                                Similarity
                                                                                                                                                                                                                                                : IPR002174;
: IPR002290;
: IPR001245;
                                                                                                                                                                                                                                                                                   IPR00071
                                    19.2%;
ilarity 46.8%;
Conservative 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                             genomic sequence
ative Egfr transc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Mouse)
                                                                                                                                                                                                                                                                                                                                         AAG28045.1;
AAG28045.1;
AAG24386.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chordata;
Rodentia;
                                                                                                                                                                                                                                                         Furin-like.
Ser_thr_pkinase
                                                                                                                                                                                                                                                Tyr_pkinase.
                                                                                                                                                                                                                                                                                  Euk_pkinase.
                                                                                                                                                                                                                                                                                            EGFR_L_domain
                                                                                                                                                                                                                                                                                                          CytC_heme_bind
                                                                                                                                                                                                                                                                                                                                                                                        to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                          equence analysis and transcripts encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
                                    39;
                                                                                                                                                                                                                                                                                                                                          JOINED.
                                                                                                                                                                                                                                                                                                                                                                                       EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                 Score 717.5; DB 11
Pred. No. 8.7e-45;
9; Mismatches 100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence update) annotation updat isoform 1.
                                                                                62CD021C9DE32E18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                         isolation of human
                                                                                                                                                                                                                                                                                                                                                                                                              truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  databases
                                                                                  CRC64;
                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                               James
                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostom1;
; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Danielsen
d A.L.,
                                                                                                                                                                                                                                                                                                                                                                                                              receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                               C.D.
                                                           1210;
                                    21;
                                                                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A.J.
                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ċ
                                    5,
```

```
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
Pfam; PF00069; pkinase; 1.

Pfam; PF01030; Recep_L_domain; 2.

Pfam; PF01030; TYRKINASE;

PROINTS; PR00109; TYRKINASE; 1.

SMART; SM00261; FU; 3.

SMART; SM00261; TYFKC; 1.

PROSITE; PS00107; PROTEIN KINASE_ATP; 1.

PROSITE; PS00101; PROTEIN_KINASE_DOM; 1.

PROSITE; PS00109; PROTEIN_KINASE_TOM; 1.

PROSITE; PS00109; PROTEIN_KINASE_TOM; 1.

ATP-binding; Receptor; Transferase; Tyrosi

SEQUENCE 1209 AA; 134891 MW; 96FEE7F6C
                                                                                                                                                                               EMBL;
                                                                                                                                                                                                    STRAIN-FISHER: TISSUE-LI
Guttridge K., Dawson T.I
Submitted (NOV-1999) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
Epidermal growth factor
                                                                                                                                                                                                                                                                                                                  "A truncated, secreted form of the epidermal growth facts encoded by an alternatively spliced transcript in normal Mol. Cell. Biol. 10:2973-2982(1990).
                                                                                                                                                                                                                                                                                                                                                             STRAIN-FISHER; TISS
MEDLINE-90258888; I
Petch L.A., Harris
                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus norvegicus (Rat),
Eukaryota; Metazoa; Chordata;
Mammalla; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                             Submitted
                                                                                                                                                                                                                                                                        Petch L.
                                                                                                                                                                                                                                                                                 STRAIN-FISHER;
                                                                                                                                                                                                                                                                                               SEQUENCE FROM N
                                                                                                                                                                                                                                                                                                                                                     Earp H.S.;
                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9QX70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9QX70
                                                                                                                                     InterPro;
                                                                                                                                                InterPro;
                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       306 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SDCLVCQXFQDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGLRELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SDCLACLHENHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGLRELPMRNLQEILIGAVRFSNNPILCNMDTIQWRDIVQNVFMSNMSMDL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KTIQEVAGYVLIALNTVERIPLENLQIIRGNALYENTYALAILSN-----YGTNR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGGALEEKKVCQGTSNRLTQLGTFEDHFLSLQRMYNNCEVVLGNLEITYVQRNYDLSFL
                                                                                                                                                                               M37394; AAF14008.1;
P11362; 1FGK.
                                                                                                                          ro; IPR001245; PF00757; Furin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329
                                                                                                                                               ; IPR000719; ; IPR002174;
                                                                                                                                                                                                                                                            (NOV-1991)
                                                                                                                                                                      IPR000494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                             TISSUE=LIVER;
188; PubMed=2342466;
1rris J., Raymond V.W.,
                                                                                                                           Furin-like;
                                                                                                                                                                                                                            TISSUE-LIVER;
                                                                                                                                                                                                                                                                                  TISSUE-LIVER;
                                                                                                                                                                                                     to the
                                                                                                                                                                                                                                                            ç
                                                                                                                                                                      EGFR_L_domain.
                                                                                                                                    Tyr_pkinase
                                                                                                                                                Furin-like.
                                                                                                                                                          Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 13, Created)
. 13, Last sequence upo
. 21, Last annotation u
                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                       Earp H.S.;
EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                            EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
  e; Tyrosine-protein kinase.
96FEE7F6CC1B7773 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1209
                                                                                                                                                                                                                                                                                                                                                               Blasband
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                              databases
                                                                                                                                                                                                                                                                                                                                                               A.J.,
                                                                                                                                                                                                                                                                                                                                                               Lee
                                                                                                                                                                                                                                                                                                                               factor receptor prmal rat tissue.
                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -QSHPS
                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                79
                                                                                                                                                                                                                                                                                                                                . J.
```

```
QPESED ID QPESE AC QPESED ID QPESE DT 01-MA DT 01-MA DT 01-JU DE ERPP.
OS Rattu OC EUKAR OC HAMMA OX NCBI_I ISUU RA YU Y.
RA YU Y.
RA YU Y.
RA TISSUU RAL TISSUU RAL ENBL;
DR INTER TORN IN
                                                    õ
                                                                                                           В
                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
        밁
                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 180; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match 19.1%; Score 714.5; DB 11; Length Best Local Similarity 46.7%; Pred. No. 1.5e-44; Matches 142; Conservative 42; Mismatches 105; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9ESEO;
01-MAR-2001 (TrEMBLrel. 16, Created)
01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
01-UN-2002 (TrEMBLrel. 21, Last annotation update)
Epidermal growth factor receptor related protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
TISSUE-GASTRO-DUODENAL MUCCOUS;
Yu Y., Moshler J.A., Majumdar A.P.N.;
"Cloning of a novel EGFR-related peptide: A putative negative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       regulator of EGFR.";
Submilted (MAR-2001) to the EMBL/GenBank/DDBJ databases.
EMBL, AF187818; AAG17037.2;
InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR002174; Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9ESE0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF01030; Recep_L_domain; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00757; Furin-like; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         266
243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           326 DVGS 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14 LLAALCAAGGALEEKKVCQGTSNRLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRN 73
                                                                                                           PKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLST 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HLTGCPKCDPSCPNGSCWGRGEENCQKLTKIICAQQCSRRCRGRSPSDCCHNQCAAGCTG 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S-RACHPCSPMCKGSRCWGESSEDCQSLTRTYVCAGGCA-RCKGPLPTDCCHEQCAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DHGS 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRESDCLVCHRFRDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -YGTNKTGLRELPMRNLQEILIGAVRFSNNPILCNMETIQWRDIV-QDVFLSNMSMDVQR 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                       478 AA;
                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    53233 MW; CF873A8376C519E5 CRC64;
                                                                                                                                                                                                                                                                                                                                   18.8%; Score 704.5; DB 11; Length 478; 34.5%; Pred. No. 2.4e-44; Live 62; Mismatches 180; Indels 99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1209
                                                                                                                                                                                                                                                                                                                                   99;
                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    265
                                                                                                                                                                                                                                                                                                                                      18;
```

210 ACHPCSPROKOSCROGGENOCASTRYVOLOGIA-ROKOPPTDCCHOCACHOCACCICAPT 168 SCPRCDPSCPROSCROGGENCOKLTKITACOCCHRCRARPSDCCHRCCACCTORM 269 SDCLACLIFINHSGICELHCPALLYTKITACOCCHRCRARPSDCCHRCCACCTORM 269 SDCLACLIFINHSGICELHCPALLYTKITACOCCHRCRARPSDCCHRCCACCTORM 269 SDCLACLIFINHSGICELHCPALLYTKITACOCCHRCRARPSDCCHRCCACCTORM 269 SCACGAMVHHHRSSTREGGGDLTIGLEPSEEEAPRSPLAPSEGACCKACCPANTVTDIFG 269 SGACGAMVHHRHSSTREGGGDLTIGLEPSEEEAPRSPLAPSEGACCKACCRACCKOCCHCACACA 260	<del></del>			•	•			•		· · · · · · · · · · · · · · · · · · ·				•		<u>-</u>		
210 ACHCCSPMCKGSRCGGSSEDQQSITRYVCAGGCA-RCKELPTYCCIBGCAAGCTGRAL 210 CI	oy b oy	Qy Db	Оy	Оу	Qu Ве ма	DR SQ		R R R R			RESU Q9BU ID AC	Db	Qy	B 64	p dy	Ф	Db Qy	ФР
	93 HKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCOSLIPRTVCAGGC-ARCKGPLP 1	LAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIF:  :  :	QVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYA	LGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGC	itch 18.6%; Score 697; DB 4; Length 331; 2al Similarity 44.6%; Pred. No. 5.3e-44; 139; Conservative 45; Mismatches 98; Indels 30;	01030; Recepdomain; 1. 01030; Recepdomain; 1. M00261; FU; 2. 331 AA; 36489 MW; 45B8EBEE683FE7E8	BC002706, AAH02706.1; -  BC002706, AAH02706.1; -  Pro; IPR000494; EGFR_L_domain.  Pro; IPR002174; Furin-like.  PR00757- Furin-like. 1	FROM N.A. LACENTA;  1 (FED - 2001) to the EMBI (Condant /DDBI database)	Chordata; Craniata; Vertebrata; Eute Primates; Catarrhini; Hominidae; Hom	(TrEMBLrel. 17, Created) (TrEMBLrel. 17, Last sequence update) (TrEMBLrel. 21, Last annotation update) r-erb-b2 avian erythroblastic leukemia viral	T 13 7 29BUD7 PRELIMINARY; PRT; 331 29BUD7;	38 LAVVGLNITSLPWQVPSLSWQAVTRPLHPLAQNRVSWDTGP	95AAPQPHPPPAFSPAFDNLYYWDQDP 519	LPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGG	GLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGP	SGAGGMVHHRHRSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAK	SDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVG	ACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKH

```
PRESCRIPTION OF THE PROPERTY O
                                                     밁
                                                                                                 Ş
                                                                                                                                                       밁
     S
                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 143; Conserv
                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF01030; Recep_L_domain; 2.
PRINTS; PR00109; TYRKINASE.
ProDom; pD000001; Euk_pkinase; 1.
SMART; SM00261; FU; 3.
SMART; SM00219; Tyrkc; 1.
PR051TE: PS00190; CYTCCHROME_C; UNKNOWN_1.
PROSITE: PS000343; GRAM_POS_ANCHORING; UNKNOWN_1.
PROSITE: PS000107; PROTEIN_KINASE_ATP; 1.
PROSITE: PS00109; PROTEIN_KINASE_TYR; 1.
PROSITE: PS00109; PROTEIN_KINASE_TYR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN-RIO PURLFICATION;
MEDLINE-98241172; PubMed-9582016;
Dimitrijevic N., Winkler C., Wellbrock C.,
Altschmied J., Schartl M.;
"Activation of the Xmrk proto-oncogene of yoverexpression and mutational alterations."
Oncogene 16:1681-1690(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XMRK.
Xiphophorus xiphidium.
Xiphophorus xiphidium.
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha;
Cyprinodontiformes; Poeciliidae; Xiphophorus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (JUL-2000) to the EMBL/GenBank/DDBJ EMBL; U53471; AAD10500.2; -. HSSP; P1182; LFGK.
InterPro; IPR000345; CytC_heme_bind.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR001899; Gram_pos_anchor.
InterPro; IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-RIO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-1999
01-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9YH40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
     163
                                                                                                      103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  284
                                                     85
                                                                                                                                                       28
                                                                                                                                                                                                     43
                                                                            VLTAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR
                                                                                                                                             SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSR
                                              VLIAMNEVSTIPLVNLRLIRGQNLYEGNFTLLVMSNYQK-NPSSP--DVYQVGLKQLQLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GVCVASCPHNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOCCHDECAGGCSGPQDTDCFACRHFNDSGACVPRCPQPLVYNKLTFQLEPNPHTKYQYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PF00069;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ASCVTACPYNYL 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00757; Furin-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IPR000719; Euk_pkinase. IPR002174; Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR000494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PURIFICATION;
                                                                                                                                                                                                                                                                                                                                                    1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel. 10, Created)
(TrEMBLrel. 15, Last sequence update)
(TrEMBLrel. 21, Last annotation updat
rosine kinase proto-oncogene.
                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                            Kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  295
                                                                                                                                                                                                                                                                          17.8%;
                                                                                                                                                                                                                                                                                                                                                    129614 MW;
                                                                                                                                                                                                                                                                                                                                                                         Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGFR_L_domain.
                                                                                                                                                                                                                                                   46;
                                                                                                                                                                                                                                                Score 664.5; 1
Pred. No. 7.4e
46; Mismatches
                                                                                                                                                                                                                                                                                                                                                  ; Tyrosine-protein kinase
7F7EE38D8771A74E CRC64;
                                                                                                                                                                                                                                                                             .4e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Xiphophorus .";
                                                                                                                                                                                                                                                                                                 DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gomez
                                                                                                                                                                                                                                                   129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Α.,
                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Duschl
                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              283
                                                                                                                                                                                                                                                   9
```

time

completed: April ne : 52.1538 secs

28,

2003,

13:41:31

```
δÃ
                                       B
                                                          Ş
                                                                                 В
                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                         Query Match
Best Local Similarity
Matches 121; Conserv
                                                                                                                                                                           HSSP; P04141; 2GMF:
Interpro; IPRO00773; GM_CSF.
Pfam; PP01109; GM_CSF; 1.
PRINTS; PR00693; GM_CSF, 1.
PRODOM; PD007349; GM_CSF; 1.
SMART; SM00040; CSF2; 1.
PROSITE; PS00702; GM_CSF; 1.
PROSITE; PS00702; GM_CSF; 1.
VARIANT 60 60 V
                                                                                                                                                                                                                                                                                                                                                                                                  01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Granulocyte-macrophage colony-stimulating factor.
GM-CSF.
                                                                                                                                                                                                                                                   naturally infected with Ebola (Reston).";
Submitted (AUG-2000) to the EMBL/GenBank/DDBJ
EMBL; AY007376; AAG16626.1; -.
HSSP; P04141; 2GMF.
                                                                                                                                                                                                                                                                                                                                              Macaca mulatta (Rhesus.macaque).
Eukaryota; Metazoa; Chordata; Craniata; V.
Mammalia; Eutheria; Primates; Catarrhini;
Cercopithecinae; Macaca.
NCBI_TaxID=9544;
                                                                                                                                                                                                                                                                                              Hutchinson K.L., Villinger F., Mirar Peters C.J., Rollin P.E.; "Multiplex analysis of cytokines in
                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9GL44
137
                     899
                                                            809
                                                                                                     548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15
                                        77
                                                                                17
                                                   ELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPF
                                                                               DCWEPVQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DCWEPVQE
                                        ELYKQGLQGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFQSFKENLKDFLLVIPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHENHSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CWAPGPGHCQKFTKLLCAEQCNRRCRGPKPIDCCNEHCAGGCTGPRATDCLACRDFNDDG
                                                                                                                                                                   60
144 AA;
                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
144
                     675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -GMLEVDENGKRS-CKPCDGVCPKVCDG-IGIGS
                                                                                                                                                                    16177
                                                                                                                                 17.5%;
                                                                                                                                                                    ¥
                                                                                                                                                                                                                                                                                                                 Έ
;
                                                                                                                          6
                                                                                                                        Score 654; DB 6; 1
Pred. No. 2.8e-41;
6; Mismatches 1;
                                                                                                                                                                              <
                                                                                                                                                                                                                                                                                                                   Miranda
                                                                                                                                                                    7D5F381DA2FC832F
                                                                                                                                                                             v
                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144
                                                                                                                                                                                                                                                                                                                  M.E.,
                                                                                                                                                                                                                                                                                                                                                                       Vertebrata; Eutele
i; Cercopithecidae;
                                                                                                                                                                                                                                                                                              sera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                              0f
                                                                                                                                                                                                                                                                                                                   Ksiazek
                                                                                                                                                                                                                                                                           databases
                                                                                                                                             Length
                                                                                                                                                                    CRC64;
                                                                                                                                                                                                                                                                                              cynomolgus
                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         386
                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                               144;
                                                                                                                                                                                                                                                                                               macaques
                                                                                                                          0
                                                                                                                         Gaps
                                                                                 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       261
                                                                                                                                                                            . نند
                                                                                                                          0
```

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2405.
1947.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB DB
      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-821-883-2
3739
1 MRAAPLLLARAASL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112892 seqs, 41476328 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLOSUM62
Gapop 10.0 , Gapext 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     April 28, 2003, 13:37:23; Search time 14.4231 Seconds
      50.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MRAAPLLLARAASLSLGFLF.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000000000
      ВВ
  ERB2_HUMAN
ERB2_MESAU
EGGFR_CHICK
EGGFR_HUMAN
ERB4_HUMAN
ERB4_HUMAN
ERB4_ROME
ERB3_RAT
ERB3_RAT
XMRK_IFMA
CSF2_SHEED
EGGFR_DROME
CSF2_CEGL
CSF2_PIG
CSF2_PIG
CSF2_RAT
CSF2_ROUSE
ILPR_BRALA
ERB2_MOUSE
INSR_HUMAN
INSR_MOUSE
INSR_HUMAN
INSR_RAT
IRR_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (without alignments) 1984.228 Million cel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ЕРУОЕСАРРРРААЛНИННН
P04141 homo sapien Q6279 rattus norv P1338 xiphophorus P28773 ovis aries P04412 drosophila P51748 cervus elap Q29118 sus scrofa P11052 bos taurus P48749 canis famil O62757 felis silve P48750 rattus norv Q60481 cavia porce P24348 caenorhabdi P01587 mus musculu 002466 branchiosto P70424 mus musculu 025197 hydra atten P09208 drosophila P06213 homo sapien P15208 mus musculu Q25410 lymnaea sta Q9wt14 mus musculu P15127 rattus norv P14616 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P00533
Q15303
Q01279
Q62956
P21860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P06494 rattus norv
Q60553 mesocricetu
P13387 gallus gall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P04626 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 homo sapien
3 homo sapien
9 mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0 homo sapien
1 homo sapien
9 rattus norv
8 xiphophorus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 1

ERB2_H

ERB2_H

AC P04626

DT 13-AUG

DT 15-JUN

DE Recept

DE (p185e

DE surfac

GN ERBB2

OS Homo s

OC Eukary

OC Mammal

OX NCBI_T

RN 11]

RP SEQUEN
    c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D ERB2_HUMAN STANDARD; PRT; 1255 AA.

C P04626;

T 13-AUG-1987 (Rel. 05, Created)

T 13-AUG-1987 (Rel. 05, Last sequence update)

T 13-BUG-1987 (Rel. 05, Last sequence update)

T 15-JUN-2002 (Rel. 41, Last annotation update)

E Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)

E Receptor protein-tyrosine kinase erbB-2) (Tyrosine kinase-type cel

E (p185erbB2) (NEU proto-oncogene) (C-erbB-2) (Tyrosine kinase-type cel

E surface receptor HER2) (MLN 19).

N ERBB2 OR HER2 OR NGL OR NEU

N ERBB2 OR HER2 OR NGL OR NGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    355
443
443
454
454
454
454
454
454
454
```

			1			11
	P0320	BRL1 EBV	<b>—</b>	605	4.2	157.5
	Q1416	SREC_HUMAN		830	4. 3	160
	P8112	IRS2_MOUSE	-	1321	4.3	162
	P2324	SFPQ_HUMAN	<u>-</u>	707	4.4	166
	P1530	PPAP_HUMAN	ᆫ	386	4.5	168
	Q9umn	TRX2_HUMAN	_	2715	4.8	178
5 aedes aegyp	Q93105	INSR_AEDAE	_	1390	5.5	207
	Q6471	IRR_RAT	_	581	6.1	228.5
	Q6075	IG1R_MOUSE	ب	1373	6.2	233.5
	P2406	IG1R_RAT	<b>—</b>	1370	6.3	235.5
	P(806	IG1R_HUMAN	_	1367	6. 6	246
	P1461	IRR_CAVPO	Ľ	1300	6.6	246.5

## ALIGNMENTS

2.7.1.112) kinase-type

cell .

	-!- SUBCELLULAR LOCATION: Type I membrane protein.	ဌဌ
		S
	-i- SÜBUNIT: HETERODIMER WITH EACH OF THE OTHER ERBB RECEPTORS	CC
	phosphate.	င္ပ
٠	-!- CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + protein	င္ပ
• .	ALPHA AND AMPHIREGULIN.	င္ပ
	POTENTIAL LIGAND FOR THIS RECEPTOR. NOT ACTIVATED BY EGF, TGF-	င္ပ
	ALTHOUGHT NEUREGULINS DO NOT INTERACT WITH IT ALONE. GP30 IS A	င္ပ
	MPONENT OF A NEUREGULIN-RECEPT	റ്റ
	Genomics 15:426-429(1993).	RL
	specific competition hybridization.";	RT
	"Characterization of a new allele of the human ERBB2 gene by allele-	RŢ
	Ehsani A., Low J., Wallace R.B., Wu A.M.;	RA
	MEDLINE=93194196; PubMed=8095488;	RX
	VARIANTS VAL-654 AND VAL-655.	RΡ
	[4]	RN
	Proc. Natl. Acad. Sci. U.S.A. 82:6497-6501(1985).	RL
	human salivary gland adenocarcinoma.";	RT
	c-erbB-1/epidermal growth factor-receptor gene and is amplified in a	RŢ
	"A v-erbB-related protooncogene, c-erbB-2, is distinct from the	RΤ
	Semba K., Kamata N., Toyoshima K., Yamamoto T.;	RA
	MEDLINE=86016729; PubMed=2995967;	RX
	SEQUENCE OF 737-1031 FROM N.A.	ŖР
	[3]	RN
	Science 230:1132-1139(1985).	RL
	shares chromosomal location with neu oncogene.";	RΤ
	"Tyrosine kinase receptor with extensive homology to EGF receptor	RT
	Francke U., Levinson A., Ullrich A.;	RΑ
	McGrath J., Seeburg P.H., Libermann T.A., Schlessinger J.,	RΑ
	Coussens L., Yang-Feng T.L., Liao Y.C., Chen E., Gray A.,	RΑ
	MEDLINE=86070181; PubMed=2999974;	RX
	SEQUENCE FROM N.A.	RP
	. [2]	æ
	Nature 319:230-234(1986).	RL
		RΤ
	"Similarity of protein encoded by the human c-erb-B-2 gene to	RT
	Saito T., Toyoshima K.;	RΑ
	Yamamoto T., Ikawa S., Akiyama T., Semba K., Nomura N., Miyajima N.,	RA
	MEDLINE=86118663; PubMed=3003577;	RX
•	SEQUENCE FROM N.A.	RP

```
SMART; SM00219; TYFKC; 1.

PROSITE; PS00107; PROTEIN_KINASE_TYR; 1.

PROSITE; PS00109; PROTEIN_KINASE_DOM; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.

Transmembrane; Glycoprotein; Multigene family; Rece

Transmembrane; Groprotein kinase; ATP-binding;
  DOMAIN
NP_BIND
HINDING
ACT_SITE
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00069; pkinase; 1.
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain;
Pfam; PF02757; YLP; 2.
ProDom; PD000001; Euk_pkinase;
                                                                                                                                                                                                                                                                        DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                          SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a control to between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and form
                                                                                                                                                                                                                                                                                                               Polymorphism.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entities requires a license agreement ( or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MIM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSSP;
                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IL; M11730; AAA75493 1

IL; M12036; AAA35978 1

IL; X03363; CAA27060 1

2; A25491; A25491 1

3P; P11362; IFGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE RESIDUES (BY SIMILARITY).

POLYMORPHISM: THERE ARE FOURS ALLELES DUE TO THE VARIATIO POSITIONS 654 AND 655. ALLELE B1 (654-ILE-ILE-655) HAS A OF 0.782; ALLELE B2 (654-ILE-VAL-655) HAS A FREQUENCY OF ALLELE B3 (654-VAL-VAL-655) HAS A FREQUENCY OF 0.012.

SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       M11767; AAA35808.1;
M11761; AAA35808.1;
M11762; AAA35808.1;
M11763; AAA35808.1;
M11764; AAA35808.1;
M11765; AAA35808.1;
M11766; AAA35808.1;
M11766; AAA35808.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    w; HGNC:3430; ERBB2
164870; -.
                                                                                                                                                                                                                                                                                                                                                                                                        SM00261; FU; 3.
SM00219; TYTKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                i iPR000494; EGFR
i iPR000719; Euk_R
i iPR002174; Furin
i iPR001245; Tyr_F
i iPR004019; YLP_n
    ; EGFR_L_domain.
; Euk_pkinase.
; Furin-like.
; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 institutions as long as its content stement is not removed. Usage by a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
POTENTIAL.

CYTOPLASMIC (POTENTIAL).

CYTOPLASMIC (POTENTIAL).

PROTEIN KINASE.

ATP (BY SIMILARITY).

ATP (BY SIMILARITY).

BY SIMILARITY.

BY SIMILARITY.
                                                                                                                                                                                                                                                                                 POTENTIAL.

RECEPTOR PROTEIN-TYROSINE EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            movea. Usage by and for (See http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                       Receptor; Signal;
ing; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARIATIONS IN
5) HAS A FREQUENCY
UENCY OF 0.206;
                                                                                                                                                                                                                                                                                                 KINASE ERBB-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ch/announce,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     its
                      õ
                                                                            Š
                                                                                                         망
                                                                                                                                 Ş
                                                                                                                                                                                      S
                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                           Ъ
                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
  밁
                                                      밁
                                                                                                                                                             밁
                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Sin
Matches 509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
MOD_RES
MOD_RES
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANT
                                                       616
                                                                                                           556
                                                                                                                                                                                                                  436
                                                                                                                                                                                                                                                                       376
                                                                                                                                                                                                                                                                                                                            316
                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                   196
                                                                                                                                                                                                                                                                                                                                                                                                                                                            215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136
                                                                                                                                                              496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35 LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                                                                                                                                                                                                                                                                                                             LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GLRELQLRSLTEILKGGYLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPC
  KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY
                                                                                                         NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK
                                                                                                                                                             TANRPEDECYGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECYEECRYLQGLPREYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GLRELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                       FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI
                                                                                                                                                                                                                  LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH
                                                                                                                                                                                                                                                                       FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI
                                                                                                                                                                                                                                                                                                                            PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                              LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1170
1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124
124
187
259
530
571
654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1170
A; 137909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      576
584
623
634
642
1139
1124
124
124
187
187
530
530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BY SIMILARITY.
BY GILCHATION
N-LINKED (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 2405.5;
Pred. No. 2.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /FTId=VAR_004078.
P -> A (IN REF. 2).
W; 39E9DFDA04DCF962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /FTId=VAR_004077.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ·
•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GLCNAC.

GGLCNAC.

GGLCNAC.

GGLCNAC.

GGLCNAC.

GGLCNAC.

GGLCNAC.

GGLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5; DB 1;
1.2e-124;
les 3;
                                                                                                                                                                                                                                                                                                                                                        (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                            615
                                                                                                                                                                                                                     495
                                                                                                                                                                                                                                                                       435
                                                                                                                                                                                                                                                                                                                            375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              75
                                                       675
                                                                                                                                                                555
                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                               315
                                                                                                                                                                                                                                                                                                                                                                                                                                   255
                                                                                                                                                                                                                                                                                                                                                                                                                                                            274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94
                                                                                                                                     329
                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ·
·
·
```

۲.

THE FIRST PROPERTY OF THE FIRST PROPERTY OF

proto-

A HOMODIMER

ch/announce/

```
RESULT 2
ERB2_RAT
            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                  맖
                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
MEDLINE-92155181; Gullick W.J., Botto
                                                  "An extended family of protexpressed in the vertebrate Neuron 6:691-704(1991).
                                                                                                                               Nature
[2]
                                                                                                                                                                                  SEQUENCE FROM N.A.
TISSUE-Neuroblastoma;
MEDLINE-86118662; PubMed-3945311;
                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                         receptor-related ERBB2 OR NEU.
                                                                                                                                                                                                                                                                                         01-Jan-1988 (Rel. 06, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-DUN-2002 (Rel. 41, Last annotation update)
15-DEC representation update)
Receptor protein-tyrosine kinase erbB-2 precursor (EC 2)
(p185erbB2) (NEU prote-oncogene) (C-erbB-2) (Epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                  1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1096
                                                                                                MEDLINE=91222560;
                                                                                                          SEQUENCE OF 852-905 FROM TISSUE-Sciatic nerve;
                                                                                                                                                      protein
                                                                                                                                                              Bargmann C.I., Hung M.-C., Wa
"The neu oncogene encodes an
                                                                                                                                                                                                                            NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                P06494;
                                                                                                                                                                                                                                                                                                                                                             ERB2_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                     508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            --GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA
                                                                                                                                                                                                                                                                                                                                                                                                                 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                          AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                         KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \textbf{FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP}
                                                                                                                                         319:226-230(1986)
                                                                                   Lemke G.
          NMR OF 650-668.
181; PubMed=1346763;
Bottomley A.C., Loi
                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                  protein).
                                                                                              PubMed=2025425;
                                                               protein-tyrosine kinase
brate nervous system.";
                                                                                                                                                                         ., Weinberg
                                                                                                                                                               epidermal growth factor receptor-related
                                                                                                                                                                                                                                       Craniata; Vertebrata; Sciurognathi; Muridae;
           Lofts F.J.,
                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                         R.A.;
                                                                                                                                                                                                                                                                                                                                                             1257
                                                                                                                                                                                                                                                                                                                                                             3
           Doak D.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                     546
                                                                         genes
                                                                                                                                                                                                                                        Euteleostomi;
; Murinae; Rattus
           Mulvey
                                                                         differentially
                                                                                                                                                                                                                                                                                            2.7.1.112)
1 growth factor
           ,
D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
            SMART; SM00261; FU; 3.
SMART; SM00219; TyrKc; 1.
PROSITE; PS00107; PROTEIN_
PROSITE; PS00109; PROTEIN_
PROSITE; PS50011; PROTEIN_
          ACT_SITE
DISULFID
                                                                                                                                                                                            NP_BIND
                                                                                                                                                                                                                                       DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWI
                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF01030; Recep_L_domain;
Pfam; PF02757; YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00069; pkinase; 1. Pfam; PF00757; Furin-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        use by non-profit institumodified and this statement entities requires a license
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Newman R., Crumpton M.J., Sternberg M.J.E., Campbell I.D.;
"Three dimensional structure of the transmembrane region of the pro-
oncogenic and oncogenic forms of the neu protein.";
EMBO J. 11:43-48(1992).

-i- FUNCTION: ESSENTIAL COMPONENT OF A NEUREGULIN-RECEPTOR COMPLEX,
ALTHOUGHT NEUREGULINS DO NOT INTERACT WITH IT ALONE. GP30 IS A
POTENTIAL LIGAND FOR THIS RECEPTOR. NOT ACTIVATED BY EGF, TGF-
ALPHA AND AMPHIREGULIN.

-i- CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + protein
                                                                                                                                                                                                                                                                                                      Proto-oncogene;
                                                                                                                                                                                                                                                                                                                                                                                           ProDom; PD00001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                  Transferase;
                                                                                                                                                                                                                                                                                                                            Transmembrane; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-1ike.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR004019; YLP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; X03362; CAA27059.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYTOSINE Phosphate.
SUBUNIT: HETERODIMER WITH EACH OF THE OTHER ERBB RECEPTORS
THE CONSTITUTIVELY ACTIVATED ONCOGENIC VARIANT FORMS A HOW
SUBCELLULAR LOCATION: Type I membrane protein.
PYM: LICAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE
RESIDUES (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way iffed and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A24562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P11362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000494;
IPR000719;
           e; Glycoprotein; Multigene family; Receptor; Signal; Tyrosine-protein kinase; ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TVRTNU.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1FGK
                                                                                                                                                                                                                                                                                                      Disease
                                                                                                                                                                                                                                                                                                                           PROTEIN_KINASE_ATP;
PROTEIN_KINASE_TYR;
PROTEIN_KINASE_DOM;
YCoprotein; Multigene
            Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGFR_L_domain.
Euk_pkinase.
                                                                                                                                                                                                                                                                                                        mutation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALT_INIT
                                                                                                                                                                                                                  CYTOPLASMIC
CYS-RICH.
CYS-RICH.
PROTEIN KINA
           POTENTIAL
                                                                                                                                                                                                                                                                        EXTRACELLULAR
                                                                                                                                                                                                                                                                                 RECEPTOR PROTEIN-TYROSINE KINASE ERBB-2
                                                                                                                                                                                                                                                                                            POTENTIAL.
                                       Y SIMILARITY
                    SIMILARITY
SIMILARITY
                                                                                                                                                                                   SIMILARITY
                                                                                                                                                                                                      (BY
                                                                                                                                                                                             SIMILARITY)
SIMILARITY)
                                                                                                                                                                                                                   KINASE
                                                                                                                                                                                                                                                                                                                                       ---
                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                        (POTENTIAL)
```

```
Ş
                                                     밁
                                                                                                  Ş
                                                                                                                                                       밁
                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match 52.1%;
Best Local Similarity 34.2%;
Matches 433; Conservative 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
MOD_RES
MOD_RES
CARBOHYD
CARBO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           472
  330
                                                        712
                                                                                                             330
                                                                                                                                                                   652
                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                        592
                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                   532
                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11 AASISIGFLFILFFWIDRSVLAKELARGAASTQVCTGTDMKLRLPASPETHIDMLRHLYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAHLCFVHTVPWDQLFRNPHQALLHSGNRPEEDLCVSSGLVCNSLCAHGHCWGPGPTQCV 531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YISAWPDSLRDLSVFQNLRIIRGRILHDGAYSLTLQGLGIHSLGLRSLRELGSGLALIHR 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AQMRILKETELRKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILD 771
                                                                                                                                                             PVTFIIATVVGVLLFLILVVVVGILIKRRRQKIRKYTMRRLLQETELVEPLTPSGAMPNQ
                                                                                                                                                                                                                                                                        YKDSSSCVARCPSGVKPDLSYMPIWKYPDEEGICQPCPINCTHSCVDLDERGCPAEQRAS
                                                                                                                                                                                                                                                                                                                                                                                NCSHFLRGQECVEECRVWKGLPREYVSDKRCLPCHPECQPQNSSETCFGSEADQCAACAH 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RGARAITSDNVQEFDGCKKIFGSLAFLPESFDGDPSSGIAPLRPEQLQVFETLEEITGYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAWCRWGFLLAL------LPPGIAGTQVCTGTDMKLRLPASPETHLDMLRHLYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMHNPEGRYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              569
589
602
628
631
1143
1150
1250
188
188
260
532
573
631
661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ă.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY SIMILARITY.

BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       586
625
636
644
1141
1250
188
188
188
532
573
631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                        651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70
                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . . •
```

30	VERELIGICLTSTVQLVTQLMPYGCILDHVREHRGRIGSQDLI  VHRDLAARNVLVKSPNHVKITDFGLARLLDIDETEYHADGGR  DSECRPRFFELVSEFSRMARDPQRFVVIONEDLGPSSPMDST  DSECRPRFFELVSEFSRMARDPQRFVVIONEDLGPSSPMDST
NHVKITDFGLARLLDIDETEYHADGGK  TFGAKFYDGIPAREIPDLLEKGERLPQ TFGAKFYDGIPAREIPDLLEKGERLPQ TFGAKFYDGIPAREIPDLLEKGERLPQ TFGAKFYDGIPAREIPDLLEKGERLPQ TFGAKFYDGIPAREIPDLLEKGERLPQ TGGAGMVHHRHRSSSTRSGGGDLTLGL GLQSLPTHDPSPLQRYSEDPTVPLPSE HILL	NHVKITDFGLARLLDIDETEYHADGGKVPIKWM
	NWCVQI  PPICTI  PRICTI  PRICTI

```
Query Match
Best Local S
Matches 423
                                                                                                                                                                             MOD_RES
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                          ACT_SITE
DISULFID
                                                                                                                              CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
NP_BIND
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities
or send a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00069; pkinase; 1.
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain;
Pfam; PF02757; YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProDom; PD000001; Euk_pk1
SMART; SM00261; FU; 3.
SMART; SM00219; TyrKC; 1.
PROSITE; PS00107; PROTEIN
                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Proto-oncogene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; D16295;
HSSP; P11362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001245; Tyr_pkinas
InterPro; IPR004019; YLP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ween the
European
   423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  s requires a license agreement (9
an email to license@isb-sib.ch).
                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   non-profit institutions a
and this statement is not
requires a license agreeme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PS50011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR000494; EGFR_L_domain.
IPR000719; Euk_pkinase.
IPR002174; Furin-like.
                                                                                                                                                                                                                                                                                                                         Swiss Institute The Bioinformatics Institute. The Bioinformatics Institutions as long removed in the second second
   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tyrosine-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BAA03801.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Glycoprotein;
                                                                  Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROTEIN_KINASE_ATP; 1.
PROTEIN_KINASE_TYR; 1.
PROTEIN_KINASE_DOM; 1.
YCOProtein; Multigene f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Euk_pkinase;
                                                                                 533
528
528
540
550
596
623
6434
6434
1139
1139
1247
1187
1257
1257
1257
530
559
                                                                                                                                                                                                                                                                                                                                                                                                                                     Institute of Bioinformatics
                51.8%;
33.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tyr_pkinase
                                                                138252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mutation
                                                      PHOSPHORYLATION (AUTO
PHOSPHORYLATION (AUTO
N-LINKED (GLCNAC...
N-
   32;
Score 1935; I
Pred. No. 1.1e
92; Mismatches
                                                                                                                                                                                                                                                         PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EXTRACELLULAR POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
RECEPTOR PROTEIN-TYROSINE KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         kinase;
                                                                                                                                                                                                                                                                                       Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                           SIMILARITY
SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY
SIMILARITY
                                                               SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e family; Receptor; Signal;
ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   There
                  .1e-98;
                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                           (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and the
                             Length 1254;
                                                               NEU).
NEU).
CRC64;
   Indels
                                                                                                                                                                         ·) (BY SIMILARI
·) (BY SIMILARI
· (POTENTIAL).
· (POTENTIAL).
· (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ьy
                                                                                                                                             (POTENTIAL).
                                                                                                               (POTENTIAL),
                                                                                                                                (POTENTIAL)
                                                                                                                                                                                                                           SIMILARITY).
SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL outstation
   728;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ERBB-2
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in no way commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 its
 2
                                                                               3.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γ
                  밁
                                              Š
                                                                               밁
                                                                                                            Š
                                                                                                                                             밁
                                                                                                                                                                        δÃ
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ٠<u>٥</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                  1026
                                                 330
                                                                               966
                                                                                                               330
                                                                                                                                               906
                                                                                                                                                                             330
                                                                                                                                                                                                            846
                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                          786
                                                                                                                                                                                                                                                                                                          330
                                                                                                                                                                                                                                                                                                                                        726
                                                                                                                                                                                                                                                                                                                                                                       330
                                                                                                                                                                                                                                                                                                                                                                                                       999
                                                                                                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                o.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PQQGFFFPDPAPGAGSTAHRRHRSSSTRSGGGELTLGMEPSGEEPPRSPLAPSEGAGSDV
                                                                                                                                                                                                                                                                                                                                                                                                    VIGVVVGILIKRRRQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TEVGSCTLVCPLNNQEVTAEDGTQRCEKCSKSCARVCYGLGMEHLRGARAITSANIQEFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TDVGS---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WSYGVTVWELMTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSEC
                                                                                                                                                                                                            LAARNVLVKSPNHVKITDEGLARLLDIDETEYHADGGKVPIKWIALESILRRRFTHQSDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDLSYMPIWKYPDEEGMCQPCPINCTHSCVDLDERGCPAEQRASPATSIIATVVGILLFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VWKGLPREYVNGKHCLPCHPECQPQNSTETCTGSEADQCTACPHYKDSPFCVARCPSGVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FRNPHQALLHSGNPSEEECGLKDFACYPLCAHGHCWGPGPTQCVNCSHFLRGQECVKECR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QNLRVIRGRVLHDGAYSLALQGLGIRWLGLRSLRELGSGLVLIHRNTHLCFVHTVPWDQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCKKIFGSLAFLPESFDGNPSSGIAPLTPEQLQVFETLEEITGYLYISAWPDSLHDLSVF
                                                                                 RPRFRELVSEFSRMARDPQRFVVIQNEDLGPSSPLDSTFYRSLLEDDDMGDLVDAEEYLV
                                                                                                                                                                                                                                                                          LGICLTSTVQLVTQLMPYGCLLDHVREHRGRLGSQDLLNWCVQIAKGMSYLEDVRLVHRD
                                                                                                                                                                                                                                                                                                                                        LGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGLGSPYVSRL
                                 -GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDV
                     1085
                                                                                 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 545
                                                                                                                                                965
                                                                                                                                                                        329
                                                                                                                                                                                                              905
                                                                                                                                                                                                                                                                                                                                         785
                                                                                                                                                                                                                                                                                                                                                                                                       725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84
                                                 377
                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
```

```
RESULT 4
EGFR_CHICK
á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                  EMBL; M20386; AAA48760.1; -.
InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-like.
InterPro; IPR001245; Tyr_pkinase.
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain; 2.
SMART; SM00261; FU; 4.
                                                                                                                                        PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lax I., Johnson A., Howk R., Sap J., Bellot F., Winkler M., Ullrich A., Vennstrom B., Schlessinger J., Givol D.;
"Chicken epidermal growth factor (EGF) receptor: CDNA cloning, expression in mouse cells, and differential binding of EGF and transforming growth factor alpha.",
Mol. Cell. Biol. 8:1970-1978(1988).
-1- FUNCTION: THE EGF RECEPTOR MEDIATES THE BIOLOGICAL SIGNAL CAND ALSO OF TGF-ALPHA, AMPHIREGULIN, HEPARIN-BINDING EGF, GVACCINIA VIRUS GROWTH FACTOR (BY SIMILARITY).
-1- CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + Protein ty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGFR_CHICK P13387;
                 Tyrosine-protein SIGNAL 1
CHAIN 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE-88261272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JAN-1990 (Rel. 13, Cr
01-JAN-1990 (Rel. 13, La
15-JUN-2002 (Rel. 41, La
Epidermal growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gallus gallus (Chicken).
Eukaryota; Metazoa; Chor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Archosauria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1146
                                                                                                                  PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tyrosine phosphate.
SUBCELLALAR LOCATION: Type I membrane protein.
MISCELLANEOUS: Binding of EGF to the receptor leads to
dimerization, internalization of the EGF-receptor complex,
induction of the tyrosine kinase activity, stimulation of
synthesis, and cell proliferation.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QPH-PPALCPAFDNLYYWDQDPSERGSPPNTFEGTPTAENPEYLGLDVP 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                           PS00107; PROTEIN_KINASE_ATP; F
PS00109; PROTEIN_KINASE_TYR; F
PS50011; PROTEIN_KINASE_DOM; F
brane; Glycoprotein; Receptor;
r-protein kinase; ATP-binding; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Aves; Neognathae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
30
>703
654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=3260329;
, Howk R., Sap J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chordata; Craniata; Vertebrata; Euteleostomi;
Neognathae; Galliformes; Phasianidae; Phasiani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation update)
or receptor precursor (E
                                                             ; PARTIAL.; PARTIAL.; PARTIAL.; PARTIAL.; Signal; Transferase; Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    703
                      GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (EC
                      FACTOR RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2.7.1.112)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OF EGF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cell DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AND
```

```
Ş
                                                                                                                                                                        Ş
                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                 õ
                               Ş
                                                                    밁
                                                                                                                                       В
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
밁
                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
336
                                                                                                       310
                                                                                                                                        234
                                                                                                                                                                            250
                                                                    294
                                                                                                                                                                                                                                                192
                                                                                                                                                                                                                                                                                   124
                                                                                                                                                                                                                                                                                                                      132
                                                                                                                                                                                                                                                                                                                                                         64
                                                                                                                                                                                                                                                                                                                                                                                         72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
                                                                                                                                                                                                                                                                                                                                                                                                                            4
                  SEGAGSDVFDGDLGMGAAKGLQSL 393
                                                                                                                                       CDGLCSKVCNG-IGIGELKGILSI
                                                                                                       FGASCYTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAP
                                                                                                                                                                                                                                                                                                                                                                                                                                RSPLSASGPRGAAVLVLLLLGVALCSAVEEKKVCQGTNNKLTQLGHVEDHFTSLQRMYNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                             RSVLAKELARGAA------STQVCTGTDMKLRLPASPETHLDMLRHLYQG
                                                                      FGATCVRECPHNYVVTDHGSCV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       703
77427 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.

CYTOPLASMIC (PO
BY SIMILARITY.
BY SIMIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 755.5;
Pred. No. 1.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AFF2DE11B735A690 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GICUNAC.

GICUNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .7e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                  -YEVEENGVRK-CKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       703;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                      193
                                                                                                                                                                                                                                                                                                                                                                                           131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71
                                                                                                                                          293
                                                                                                                                                                                                               233
                                                                                                                                                                                                                                                                                   174
                                                                                                                                                                                                                                                                                                                                                         123
                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10;
```

RESULT 5
EGFR\_HUMAN
ID EGFR\_HUMAN

STANDARD;

PRT;

1210

₹

```
Reiter J.L., Inc., Schehl Sinclair C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PO0533; PO6268; Q14225; Q9UMD7; Q9UMD8; Q9UMG C00688; Q9BS25; Q9BZC9; Q9BZX1; Q9B3C9; 21-JUL-1986 (Rel. 01, Created) 01-NOV-1997 (Rel. 35, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Epidermal growth factor receptor precursor (b protein-tyrosine kinase ErbB-1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ullrich A., Coussens L., Hayflick J.S., Dull T.J., Gray A., Tam A.W., Lee J., Yarden Y., Libermann T.A., Schlessinger J., Downward J., Mayes E.L.V., Whittle N., Waterfield M.D., Seeburg P.H.; "Human epidermal growth factor receptor cDNA sequence and aberrant expression of the amplified gene in A431 epidermoid carcinoma cells."; Nature 309:418-425(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                             "Human and mouse alternative EGFR transcripts extracellular domain of the receptor."; Submitted (FEB-1999) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=9/2007... Niederberger
Ilekis J.V., Gariti J., Niederberger
"Expression of a truncated epidermal
"Expression of a truncated epidermal".";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Possible role of variant RNA transcripts epidermal growth factor receptor expression. Reprod. Dev. 41:149-156(1995).
            "Expression cloning of human EGI
amplification and three related
                                                   Lin C.R., Ch
Evans R.M.,
                                                                                          MEDLINE-84196372;
                                                                                                                                                                                                           Maihle N.J.;
                                                                                                                                                                                                                                                    Reiter
                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                              Genomics
                                                                                                                                                                                                                                                                                                                                                   mouse
                                                                                                                                                                                                                                                                                                                                                                     "Comparative
                                                                                                                                                                                                                                                                                                                                                                                          Maihle N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=21100872;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. (ISOFORMS 3 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-97256547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. (ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-97078686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=95382957; PubMed=7654368; Ilekis J.V., Stark B.C., Scoccia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. (ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. (ISOFORM 1).
MEDLINE-84219729; PubMed-6328312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606;
[1]
                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                  isoforms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             factor receptor gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.8 kb
                                                                                                                                                                                                                                                                                                                                                   alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TEGFR) in ovarian canc. Oncol. 65:36-41(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Acids Res.
                                                                                                                                                                                                                                                                         ç
                                                                                                                                                                                                                                                                                                            71:1-20(2001).
                                                                                                            OF 713-924 FROM
                            OF 713-924 FROM N.A.
4196372; PubMed-6326261;
Chen W.S., Kruiger W., Stolarsky L.S.
L., Verma I.M., Gill G.N., Rosenfeld M.
on cloning of human EGF receptor compl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alternative transcript from the ceptor gene encodes a truncated cids Res. 24:4050-4056(1996).
                                                                                                                                                                                                                                                575-687 FROM N.A., Threadgill D.W.,
                                                                                                                                                                                                                                                                                                                                                                                                        Threadgill D.W., Eley G.D., Strunk K.E., Danielsen air C., Pearsall R.S., Green P.J., Yee D., Lampland iam S., Crossley T.D., Magnuson T.R., James C.D.,
                                                                                                                                                                                                                                                                                                                                                 genomic sequence analysis and ative EGFR transcripts encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Maihle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Human)
                                                                                                                                                                                                                                Balasubramaniam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=11161793;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed-8918811;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2)
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>ಬ</u>
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2).
                                                                                                                                                                                                                              Danielsen A.J
m S., Crossley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Catarrhini; Hominidae,
            messenger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     expression in human placent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>م</u>
ن
                                                                                                                                                                                                                                                                                                                                                 encoding truncated receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C., Scoccia B.;
growth factor receptor-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the
        nfeld M.G.;
or complementary DNA: (
IT RNA products 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9UMG5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human epidermal growth form of the receptor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ටස
)
                                                                                                                                                                                                                                                                                                                                                                     isolation
                                                                                                                                                                                                                              ч;
                                                                                                                                                                                      encoding only
                                                                                                                                                                                                                            Schehl C.M.,
O., Magnuson
                                                                                                                                                 databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2.7.1.112) (Receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q92795;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     placenta.";
                                                                                                                                                                                                                                                                                                                                                                     of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ното
                                                                                                                                                                                                                                                                                                                                                                                                        Lampland
s C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             000732
.. gene
n A431
                                                                                                                                                                                                                              T.R.,
                                                                                                                                                                                      the
                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                           A.J.,
```

A FI FI GORGO ROLLA REPUBLICA DE REPUBLICA DE REPUBLICA DE REPUBLICA DE REPUBLICA DE REPUBLICA DE REPUBLICA DE

```
SEQUENCE OF 150-962 FROM N.A.

MEDLINE-84245835; PubMed-6330563;

Xu Y.H., Ishii S., Clark A.J.L., Sulliva

Roe B.A., Merlino G.T., Pastan I.;

"Human epidermal growth factor receptor

variety of RNAs overproduced in A431 car

Nature 309:806-810(1984).
                                  Growth
                                                  Smith K.D., Davies M.J., Bailey D., Renouf D.V. "Analysis of the glycosylation patterns of the the epidermal growth factor receptor expressed ovary fibroblasts.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oncogene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Science 224:843-848(1984).
[8]
SEQUENCE OF 150-962 FROM N
                                                                                                                                           Margolis B.L., Lax I., Kris R., Dombalagian M., Honegger'A.M., Howk R., Givol D., Ullrich A., Schlessinger J.; "All autophosphorylation sites of epidermal growth factor (EGF) receptor and HER2/neu are located in their carboxyl-terminal tails Identification of a novel site in EGF receptor."; J. Biol. Chem. 264:10667-10671(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Contributory effects of de novo transcription and transcript termination in the regulation of human factor receptor proto-oncogene RNA synthesis."; J. Biol. Chem. 266:1746-1753(1991).
                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 1-29 FROM N.A. MEDLINE-91107677; PubMed-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 1-29 FROM MEDLINE-88217333; Publ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochem. Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    O'Malley B.W.;
                    CARBOHYDRATE-LINKAGE
                                                                                                 MEDLINE-96398132;
                                                                                                             ASN-528
                                                                                                                       CARBOHYDRATE-LINKAGE SITES
                                                                                                                                                                                                                            PHOSPHORYLATION
                                                                                                                                                                                                                                                Nature
                                                                                                                                                                                                                                                                                  Mroczkowski B.,
                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                           Proc. Natl.
                                                                                                                                                                                                                                                                                                                                                                                               Ishii S., Xu Y.H., Stratton R.H., Roe "Characterization and sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 1-29 FROM N.A. MEDLINE=85270438; PubMed=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Contributory effects of de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Waterfield
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Haley J.D., Whittle N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Isolation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Simmen F.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-85046483;
                                                                                                                                  16
                                                                                                                                                                                                               MEDLINE-89278137; PubMed-2543678;
                                                                                                                                                                                                                                              Mroczkowski B., Mosig G., Co
"ATP-stimulated interaction
and supercoiled DNA.";
Nature 309:270-273(1984).
                                                                                                                                                                                                                                                                                             MEDLINE=84191554;
                                                                                                                                                                                                                                                                                                          RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                 []
                                                                                                                                                                                                                                                                                                                                                                                                         Ishii S., Xu Y.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         identification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [10]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rfield M.D.;
human EGF receptor
                                                                                                                                                                                                                                                                                                                                                    oğ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Res. 1:375-396(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      on of an evolutionarily conserved epidermal cDNA from human A431 carcinoma cells."; Biophys. Res. Commun. 124:125-132(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OF
F
                                                                                                                                                                                                                                                                                                                                                                        growth factor
l. Acad. Sci. (
                                                                                                                                                                                                                                                                                                                              (SEP-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1028-1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gope
                                           13:121-132(1996).
                                                                                                                                                                                                                                                                              PubMed=6325948;
Cohen S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=3329716;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1210 FROM N.A.
PubMed=6093780;
M.L., Schulz T.Z.,
                                                                                                 PubMed=8962717;
                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed-2991899;
PubMed=10731668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PubMed=1988448;
                                                                                                                                                                                                                                                                                                                               ç
                     SITES
                                                                                                                                                                                                                                                                                                                                                                         r receptor gene.";
U.S.A. 82:4920-4924(1985)
                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene:
                     ASN-56;
                                                                                                                       ASN-128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       regulating
                                                                                                                                                                                                                                                                        between
                                                                                                                                                                                                                                                                                                                               SWISS-PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sullivan
                     ASN-352;
                                                                                                                       ASN-175; ASN-413;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kinchington
                                                                                                                                                                                                                                                                      epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wright D.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          carcinoma
                                                                                                                                                                                                                                                                                                                                                                                         promoter region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        e of
                                                                                                                                                                                                                                                                                                                               data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X
                                                                                      D.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transcription.";
                                                                                                                                                                                                                                                                                                                               bank
                     ASN-361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  is homologous
                                                                                                                                                                                                                                                                      growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wilson
                                                              extracellular domain in Chinese hamster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D.,
                                                                                      Hounsell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d premature epidermal growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Carpenter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ullrich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           growth
                      ASN-568
                                                                                                                                                                                                                                                                        factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   locus
                                                                                                                        ASN-444
                                                                                                                                                                                                                                                                                                                                                                                               of.
                                                                                                                                                                                                                                                                                                                                                                                                , Pastan I
                                                                                       E.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          U
                                                                                                                        AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
P.
                                                                           ō,
```

```
Query
Best I
                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Abe Y., Oda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         use by non-profit institutions as long modified and this statement is not removed: entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <del>-</del> -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sato C., Kim J.-H., Abe Y., Saito K., Yokoyama S., Ko "Characterization of the N-oligosaccharides attached Asn-X-Cys sequence of recombinant human epidermal gro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mitogens.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Carpenter G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-98225196; PubMed-9556602;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Receptors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-87297456;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REVIEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PARTIAL SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 receptor.
   192
                                                                           132
                                                                                                              156
                                                                                                                                                   82
                                                                                                                                                                                      96
                                                                                                                                                                                                                             22
                                                                                                                                                                                                                                                                36
                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                          Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  family, as TGF-alpha, amphiregulin, betacellulin, heparin-binding EGF-like growth factor. GP30 and vaccinia virus growth factor. Is involved in the control of cell growth and differentiation. FUNCTION: Isoform 2/truncated isoform may act as an antagonist. CATALLYIC ACTIVITY: ATP + a protein tyrosine - ADP + protein tyrosine phosphate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biochem. 127:65-72(2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MISCELLANEOUS: Binding of EGF to the receptor leads to dimerization, internalization of the EGF-receptor compinduction of the tyrosine kinase activity, stimulation synthesis, and cell proliferation.

SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alternative splicing.
TISSUE SPECIFICITY: Expressed in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALTERNATIVE PRODUCTS: 4 isoforms; 1/p170 truncated isoform/TEGFR, 3/p110 and 4; ar
                                                                                                                                                                                                                                                                                                                                                                                        ;; X00588; CAA25240.1; -.
;; U95089; AAB53063.1; -.
;; U48722; AAC50802.1; -.
;; U48723; AAC50044.1; -.
;; U48724; AAC50796.1; -.
;; U48725; AAC50797.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     European Bioinformatics Institute. There
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      expressed in ovarian cancers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: Type I membrane protein. Isoform 2 is
                                                                                                                                                                                                                                           PSCPNGSCWGAGEENCQKLTKIICAQQCSGRCRGKSPSDCCHNQCAAGCTGPRESDCLVC
                                                                                                                                                                                                                           SRALEEKKVCQGTSNKLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRNYDLSFLKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SWISS-PROT entry is copyright. It is produced through a sen the Swiss Institute of Bioinformatics and the EMBI
                                  PMCKGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                   LRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCS
                                                                                                                                                 IQEVAGYVLIALNTVERIPLENLQIIRGNMYYENSYALAVLSNYD
                                                                         LKELPMRNLQETLHGAVRFSNNPALCNVESIQWRDIVSSDFLSNMSMDFQNHLGSCQKCD
                                                                                                                                                                                    IQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rev.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Odaka M., Inagaki F., Lax I., Schlessinger ide bond structure of human epidermal growth . Chem. 273:11150-11157(1998).
                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Blochem. 56:881-914(1987).
ON: Receptor for EGF, but a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for epidermal growth factor and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PubMed=3039909;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AND DISULFIDE
                                                                                                                                                                                                                                                                                                                    19.3%;
                                                                                                                                                                                                                                                                                                   51;
                                                                                                                                                                                                                                                                                                 Score 721; DB
Pred. No. 2.4e
51; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       placenta.
                                                                                                                                                                                                                                                                                                                    DB 1;
2.4e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 receptor leads to EGF-receptor compl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   other polypeptide
                                                                                                                                                                                                                                                                                                   129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          produced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Isoform
                                                                                                                                                                                                                                                                                                                                      Length 1210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                thed to the growth fac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     th factor
                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                yd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kohda D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            here),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kohda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            уd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of.
                                                                                                                                                                                                                                                                                                   30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  receptor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for
                                                                                                                                                   ANKTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atypical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  commercia.
251
                                    274
                                                                         191
                                                                                                            215
                                                                                                                                                   131
                                                                                                                                                                                      155
                                                                                                                                                                                                                           81
                                                                                                                                                                                                                                                            95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                 6,
```

₽ Ş В Ş ₽ õ 문 Ş

use by non-profit institutions as long modified and this statement is not removed. entities requires a license agreement (See ) or send an email to license agreement.

(See http://www.isb-sib There are no rest

Usage

уд

and

for

.ch/announce/ commercial restrictions

is

5 9 EMBL

between

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ERB4_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plowman G.D., Culouscou J.-M., Whitney G.S., C.C., Plowman G.D., Culouscou J.-M., Whitney G.S., C.C., Plowman G.D., Chouscou J.-M., Whitney G.S., C.C., Plowman G.D., Chouscou J.-M., Whitney G.S., Whitney G.S., Whitney G.S., William G.S., Whitney G.S., William G.S., Whitney G.S., Wh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-DEC-1998 (Rel. 37, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
15-JUN-2002 (Receptor protein-tyrosine kinase erbb-4 precursor (EC
(p180erbB4) (Tyrosine kinase-type cell surface receptor)
                                                                                                                                                         This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           phorbol ester."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tissue distribution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Klagsbrun M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE=Fetal brain;
MEDLINE=97476287; PubMed=9334263;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. (ISOFORMS JM-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-93189574; PubMed-8383326;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE-Breast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (ISOFORM JM-A)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ERBB4 OR HER4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-DEC-1998
15-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ERB4_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  lenius K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -DEC-1998
                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: Type I membrane protein.

ALTERNATIVE PRODUCTS: 2 ISOFORMS; JM-A (SHOWN HERE) AND JM-B;
ARE PRODUCED BY ALTERNATIVE SPLICING. THE TWO ISOFORMS DIFFER
ARE PRODUCED BY ALTERNATIVE SPLICING. THE TWO ISOFORMS DIFFER
FUNCTIONALLY IN THEIR RESPONSE TO PHORBOL ESTER: JM-A IS PROCESS
BUT NOT JM-B. SO, THEY RESPECTIVELY REPRESENT CLEAVABLE AND
NONCLEAVABLE FORMS OF THE RECEPTOR. BOTH ISOFORMS ARE EXPRESSED
CERREELLUM, BUT ONLY THE JM-B ISOFORM IS EXPRESSED IN THE HEART.
TISSUE SPECIFICITY: EXPRESSED AT HIGHEST LEVELS IN BRAIN, HEART,
KIDNEY, IN ADDITION TO KELETAL MUSCLE, PARATHYROID, CREEBELLUM,
PITUITARY, SPLEEN, TESTIS AND BREAST. LOWER LEVELS IN THYMUS,
LUNG, SALIVARY GLAND, AND PANCREAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tyrosine phosphate.
SUBUNIT: HOMODIMER OR HETERODIMER WITH EACH
RECEPTORS (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biol. Chem. 272:26761-26768(1997).

FUNCTION: SPECIFICALLY BINDS AND IS ACTIVATED BY N FUNCTION: SPECIFICALLY BINDS AND IS ACTIVATED BY N 2, NRG-3, HEPARIN-BINDING EGF-LIKE GROWTH FACTOR, NTAK. INTERACTION WITH THESE FACTORS INDUCES CELL NOT ACTIVATED BY EGF, TGF-A, AND AMPHIREGULIN.

CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP
                                                                                                                                                                                                             SIMILARITY: BELONGS TO THE
                                                                                                                                                                                                                                                             PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE
                                                                                                                            SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RKFRDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGM 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 juxtamembrane domain isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cortas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SCVRACGAD - - - - SYEMEEDGVRK - CKKCEGPCRKVCNG - IGIGEFKDSLSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     carcinoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      differential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                             EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Choi C.J., Rio C., Plowman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND JM-B)
                                                                                                                                                                                                             RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      processing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of HER4/ErbB4. Isoform-specific processing in response to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Green J.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fourth member of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BY NEUREGULINS, NRG-
TOR, BETACELLULIN AND
CELL DIFFERENCIATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.7.1.112)
or HER4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Carlton
                                                                                                                                 a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  G.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ERBB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROCESSED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  G.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NRG-
                                                                                                                                                                                                                                                                                                                                                                                                                       Ħ
```

4.

```
ProDom: PD000001; Euk_pk
SMART; SM00261; FU; 4.
SMART; SM00219; TYFKC; 1
PROSITE; PS00107; PROTEI
PROSITE; PS00109; PROTEI
PROSITE; PS50011; PROTEI
                                       CARBOHYD
CARBOHYD
VARSPLIC
                                                                                                                                                                        CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                  NOMAIN
PLBIND
BINDING
BINDING
BINDING
ACT_SITE
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
TRANSMEM
DOMAIN
                                                                                              CARBOHYD
CARBOHYD
                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-11ke.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR004019; YLP_motif.
     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF01030; Recep_L_domain; Pfam; PF02757; YLP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; L07868; AAB59446.1;
HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00069; pkinase; 1.
PF00757; Furin-like; 1.
   1308
                                         621
1162
1258
1284
1284
1284
138
174
181
253
358
495
548
576
                                                                                                                                                                                                                                                                                                                                                                                   splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tyrosine-protein; N
 A,
                                         1325
6511
1304
6511
1304
6631
1224
6633
1224
6633
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
11284
1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN_KINASE_TYR;
PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euk_pkinase;
 146807
                                 N-LINKED (GLCNAC...) (P
   MW:
                                                                                                                                                                                                                                                                CYTOPLASMIC (POTICYS) ATP (BY SIMILARITY BY 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RECEPTOR PROTE EXTRACELLULAR POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Multigene
n kinase; A
                     (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (BY SIMILARITY).
(BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROTEIN-TYROSINE LULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          e family; Receptor; Signal;
ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    بر بر ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                      (AUTO-)
(AUTO-)
(AUTO-)
                                                                                                                                                                                                                                                                    (AUTO-)
   CRC64;
                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                    78)
78)
78)
78)
                                       Ÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KINASE
                                                                                                                                                                                                                                                                  Y SIMILARITY).
Y SIMILARITY).
Y SIMILARITY).
Y SIMILARITY).
                                         IGSSIEDCIGLMD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ERBB-4
RESULT 7
EGFR_MOUSE
ID EGFR_MO
101-FEB
DT 01-FEB
DT 01-FEB
DT 15-JUN
DE EDIDER
GFR.
OS EUKary
OC MAMMAN
OC EUKary
OC MAMMAN
OC STRAIN
RX MEDLIN
RA AVIVI
RT "Promo
RT (bek/R
RL Oncoge
RN [2]
RP SEQUEN
RX PATIA
RT "EXPRE
RY [3]
RP SEQUEN
RX PATIA
RT "EXPRE
RY [3]
RP SEQUEN
RX HIBBS
RL SIBMIT
RA LUETTE
RA LUETTE
RA LUETTE
RA LUETTE
RA GENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NFV
...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NYL
```

```
SEQUENCE FROM N.A.
STRAIN-B6/C3; TISSUE-Liver;
MEDLINE-94170986; PubMed-8125255;
Luetteke N.C., Phillips H.K., Qiu T
Jenkins N.A., Lee D.C.;
"The mouse waved-2 phenotype result receptor tyrosine kinase.";
Genes Dev. 8:399-413(1994).
                                                                                                                                                                                                                                                  STRAIN-BALB/C;
Hibbs M.L.;
Submit+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-FEB 1996 (Rel. 01-FEB-1996 (Rel. 15-JUN-2002 (Rel. Epidermal growth fi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EGFR_MOUSE
Q01279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-BALB/c, an MEDLINE-93126380;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. STRAIN-BALB/c, and CD-1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN-BALB/C; TISSUE-Liver;
MEDLINE-93026370; PubMed-1408137;
MEDLINE-93026370 of the murine fibroblast of the murine fibroblast of the Medical Promoter region of the murine fibroblast of the Medical Promoter region of the Medic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                      Paria B.C., Das S.K., Andrews G.K., Dey S.K.; "Expression of the epidermal growth factor receptor in mouse blastocysts during delayed implantation."; proc. Natl. Acad. Sci. U.S.A. 90:55-59(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             al Similarity
142; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          298
                                                                                                                                                                                                                                                     (APR-1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ıs (Mouse).
Metazoa; Chordata; C
^~~~heria; Rodentia; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                      z
                                                                                                                                                                                                                                                                                                       N.A.
TISSUE-Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and CD-1; TISSUE-Liver,
0; PubMed=7678348;
S.K., Andrews G.K., De
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 33, Created)
. 33, Last sequence update)
. 41, Last annotation update)
factor receptor precursor (E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19.3%;
                                                                                                                                                                                                                                                     6
                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 721; DB Pred. No. 2.6e
                                                                                                                                                                                                                                                       EMBL/GenBank/DDBJ
                                                           results
                                                                                                                Q1u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                Т.Н.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1210
                                                                from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                Copeland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
.6e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₹
                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (E)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Decidua;
                                                           point mutation in the
                                                                                                                                                                                                                                                       databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1308;
                                                                                                                N.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  factor
                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                Earp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12;
                                                                                                                H.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                               regulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                             EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201
```

```
Pfam; PF00069; pkinase; 1.

Pfam; PF00757; Furin-like; 1.

Pfam; PF01030; Recep_L_domain; 2.

ProDom; PD000001; Euk_pkinase; 1.

SMART; SM00251; FU; 3.

SMART; SM00219; TyrKC; 1.

PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.

PROSITE; PS00101; PROTEIN_KINASE_DOM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X78987; CAA55587.1;
EMBL; U03425; AAA17899.1;
EMBL; X59698; CAA42219.1;
EMBL; L06864; AAA53029.1;
EMBL; Z12608; CAA78249.1;
HSSP; P1362; IFGK.
MGD; MGI:95294; Egfr.
   REPEAT
REPEAT
DOMAIN
DOMAIN
DOMAIN
DOMAIN
NP_BIND
BINDING
ACT_SILFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [5]
SEQUENCE OF 1
TISSUE-Brain;
                                                                                                                                                                                                                                               TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eisinger D.P., Serrero G.;
Submitted (JUN-1992) to the EMBL/GenBank/DDBJ databases.
-I- FUNCTION: THE EGF RECEPTOR MEDIATES THE BIOLOGICAL SIGNAL AND ALSO OF TGF-ALPHA, AMPHIREGULIN, HEPARIN-BINDING EGF, VACCINIA VIRUS GROWTH FACTOR (BY SIMILARITY).
-I- CATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a control between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and formodified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                         Tyrosine-protein SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-91232866; PubMed-2030916;
Avivi A., Lax I., Ullrich A., Schlessinger J., Givol D., Morse B.;
"Comparison of EGF receptor sequences as a guide to study the ligand
                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        binding site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tyrosine phosphate.
SUBCELLULAR LOCATION: Type I membrane protein.
MISCELLANEOUS: Binding of EGF to the receptor leads to dimerization, internalization of the EGF-receptor complex. Induction of the tyrosine kinase activity, stimulation of synthesis, and cell proliferation.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1:95294; Egfr. GGR. L_domain.
75; IPR000194; EGFR. L_domain.
75; IPR000119; Euk_pkinase.
75; IPR002174; Furin-like.
75; IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      an email to
                                                                                                                                                                                                                                               648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1-714 FROM
                                                                                                                                                                                                                                                                                                                                                         Glycoprotein;
                                                                                                                                                                                                                                                                                                                                        kinase;
   24
1210
647
670
1210
300
600
1071
981
728
747
839
199
199
207
223
233
234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         license agreement
                                                                                                                                                                                                                                                                                                                                      sin; Receptor; Signal; Transfe
ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2.2.2.2
CYTOPLASMIC (
CYTOPLASMIC (
APPROXIMATE:
APPROXIMATE:
SER-RICH:
PROTEIN KINAS
ATP (BY SIMILARIT)
BY SIMILARIT)
                                                                                                                                                                                                                                                                          POTENTIAL EPIDERWAL GROWTH FACTOR RECEPTOR EXTRACELLULAR (POTENTIAL)
 Y SIMILARITY.
                                                                                                                               N KINASE.
Y SIMILARITY).
Y SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                           Transferase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         restrictions
                                                                                                                                                                                                                                                                                                                                          Repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is
i for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GP30 AN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND
 RESULT 8
ERB4_RAT
ID ERB4
AC Q629
DT 15-1
DT 15-3
DT 15-3
                                                                                                                                                                      밁
                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 141
 CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOD_RES
MOD_RES
MOD_RES
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOD_RES
                                                                                                                                                                      306
                                                                                                                                                                                                         329
                                                                                                                                                                                                                                               246
                                                                                                                                                                                                                                                                                  269
                                                                                                                                                                                                                                                                                                                                                           210
                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                         186
                                                                                                                                                                                                                                                                                                                                                                                                                                   154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                36
                                                                                                                                                                      ເດ
                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                  SDCLACLHENHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVG
                                                                                                                                                                                                                                                                                                                                          ACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKH
                                                                                                                                                                                                                                                                                                                                                                                                                   GGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGALEEKKVCQGTSNRLTQLGTFEDHFLSLQRMYNNCEVVLGNLEITYVQRNYDLSFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ARGAA--STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFL
                                                                                                                                                                                                                                               SDCLVCQKFQDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHG
                                                                                                                                                                                                                                                                                                                         SCPKCDPSCPNGSCWGGGEENCQKLTKIICAQQCSHRCRGRSPSDCCHNQCAAGCTGPRE
                                                                                                                                                                                                                                                                                                                                                                                              TGLRELPMRNLQEILIGAVRFSNNPILCNMDTIQWRDIVQNVFMSNMSMDL----QSHPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            539
991
1116
1210
 (Rel. 37, Created)
(Rel. 41, Last sequence u)
(Rel. 41, Last annotation
                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              134853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-LINKED (GLCNAC.
N-LINKED (GL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PHOSPHORYLATION PHOSPHORYLATION (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 717.5; DB 1;
Pred. No. 3.7e-32;
9; Mismatches 100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PHOSPHORYLATION PHOSPHORYLATION PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Y SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              690E20D46DF2D2F5
                                                                           1308
                                                                           ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BY PKC)
(AUTO-)
(AUTO-)
1 (AUTO-)
1 (AUTO-,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PKC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C) (BY SIMILARITY).
) (BY SIMILARITY).
) (BY, SIMILARITY).
) (BY SIMILARITY).
, MAJOR SITE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21;
                                                                                                                                                                                                                                                                                                                       245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        153
                                                                                                                                                                                                                                                                                                                                                                                              185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               79
```

. . . . . .

```
modified
entities
                                                                                                                                                                                                                                                                                                                                                                                            between
the Euro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam;
Pfam;
                                                                                            Pfam;
                                                                                                                                                                                                                                     EMBL;
EMBL;
HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 1031-1198 FROM N.A.
STRAIN-Sprague-Dawley: TISSUE-Spinal cord;
MEDLINE-97184212; PubMed-9030624;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-98221155; PubMed-9553078; Zhao Y.-Y., Sawyer D.R., Baliga R.R., Marchionni M.A., Kelly R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Neuregulins promote survival and growth of cardiac myocytes Persistence of ErbB2 and ErbB4 expression in neonatal and adventricular myocytes.";
J. Biol. Chem. 273:10261-10269(1998).
                                       PRINTS;
                                                                                                                                                      InterPro;
                                                                                                                                                                             InterPro;
                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                               or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Neuron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "An
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=91222560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-Sciatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 848-901 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE-Heart;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Receptor protein-tyrosine kinase erbB-4 precursor ERBB4 OR TYRO-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         extended family of protein-tyrosine kinase genes differentially ressed in the vertebrate nervous system."; ron 6:691-704(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RECEPTORS (POTENTIAL).
SUBCELLULAR LOCATION: Type I membrane protein.
TISSUE SPECIFICITY: PREFERENTIALLY EXPRESSED IN THE DEVELOPING
TISSUE SPECIFICITY: PREFERENTIALLY EXPRESSED IN THE DEVELOPING
NERVOUS SYSTEM. EXHIBITS DISTINCT AND HIGHLY REGIONALIZED PATTERNS
OF EXPRESSION IN THE ADULT BRAIN, WHERE IT IS MAINLY FOUND IN THE
RETICULAR NUCLEUS OF THE THALLAMUS. VERY LOW LEVELS IN KIDNEY, AND
HEART.
                                                                                                                                                                                                                                                                                                                                                                     sWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the Excurpean Bioinformatics Institute. There are no restrict by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE RESIDUES (BY SIMILARITY).
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tyrosine phosphate.
SUBUNIT: HOMODIMER OR HETERODIMER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NOT ACTIVATED BY EGF, TGF-A, AND AMPHIREGULIN (BY SCATALYTIC ACTIVITY: ATP + a protein tyrosine - ADP
                                                                                                                 rPro; IPR000494;
rPro; IPR000719;
rPro; IPR0002174;
rPro; IPR0001245;
rPro; IPR004019;
pF000757; Furin-
                                                                                                                                                                                                                                   AF041838; AAD08899.1; U52531; AAC53051.1; -P11362; 1FGK.
                                                                                               PF00069; pkinase;
; PD000001
SM00261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                norvegicus
                                                                                                                                                                                                                                                                                                               a requires a license agreement (
an email to license@isb-sib.ch)
                                       PR00109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lemke G.
                                                                                                                                                                                                                                                                                                                   non-profit institutions as rowy -- and to and this statement is not removed. Usage by and to and this statement (See http://www.isb-sib.
                                                                                               7; Furin-like;
                                                                        Recep_L_domain;
                                     TYRKINASE.
              Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PubMed=2025425,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Rat)
                                                                                                                                    Tyr_pkinase.
YLP_motif.
                                                                                                                                                                           Furin-like.
                                                                                                                                                                                              Euk_pkinase.
                                                                                                                                                                                                              EGFR_L_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HTIW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Opel D.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EACH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Han
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (EC 2.7.1.112).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Euteleostomi;
; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                       restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 +
                                                                                                                                                                                                                                                                                                                                                                                                                EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           adult
                                                                                                                                                                                                                                                                                                                                                                                                                               a collaboration
                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ERBB
                                                                                                                                                                                                                                                                                                                                  .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                              outstation
                                                                                                                                                                                                                                                                                                                                                                         'n
                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                         way
```

```
Š
                        밁
                                           Ş
                                                                       밁
                                                                                            δÃ
                                                                                                                       밁
                                                                                                                                            Š
                                                                                                                                                                                                                     Query Match
Best Local S
Matches 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
CARBOHYD
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                  CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                   MOD_RES
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                      MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NP_BIND
                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                           MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                         128
                                                144
                                                                        89
                                                                                               84
                                                                                                                                             25
                                                                       WLDRSVL-AKELARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTY 83
DTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAG
                      WVWGSLLVAARTVQPSASQSVCAGTENKLSSLSDLEQQYRALRKYYENCEVVMGNLEITS
                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                     1062
1080
1308
                                                                                                                                                                      Conservative
                                                                                                                                                                                                                     Ã,
                                                                                                                                                                                                                              19.2%;
47.2%;
                                                                                                                                                                                                                     146957
                                                                                                                                                                      41;
                                                                                                                                                                                                                     X.
                                                                                                                                                                                                                                                                                                                                                                PHOSPHORYLATION
PHOSPHORYLATION
PHOSPHORYLATION
PHOSPHORYLATION
N-LINKED (GLUNAC
                                                                                                                                                                                                                                            N-LINKED
                                                                                                                                                                                                                                                                 N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                      N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                            CYS-RICH.
CYS-RICH.
CYS-RICH.
PROTEIN P
PROTEIN P
PROTEIN P
AND (BY S
AND (B
                                                                                                                                                                     Score 717; DB 1;
Pred. No. 4.2e-32;
l; Mismatches 106
                                                                                                                                                                                                                                 TYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
RECEPTOR PROTEIN-TYROSINE KINASE ERBB-4.
                                                                                                                                                                                                                                                                                                                                          N-LINKED
                                                                                                                                                                                                                                                                                                                                                        N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                           Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY
                                                                                                                                                                                                                     D944BB0996A08B41
                                                                                                                                                                                                                                 N (IN REF. 3)
-> SYR (IN REF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY).
SIMILARITY).
                                                                                                                                                                                                                                                                            (GLCNAC.
                                                                                                                                                                                                                                                        (GLCNAC
                                                                                                                                                                                                                                                                   (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                             (AUTO-)
(AUTO-)
(AUTO-)
(AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Receptor; Signal;
ing; Phosphorylation
                                                                                                                                                                                           Length 1308;
                                                                                                                                                                                                                                <u>س</u>
.
                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                (BY SIMILARITY).
) (BY SIMILARITY).
) (BY SIMILARITY).
) (BY SIMILARITY).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
) (POTENTIAL).
) (POTENTIAL).
) (POTENTIAL).
) (POTENTIAL).
                                                                                                                                                                                                                                                                   (POTENTIAL)
(POTENTIAL)
                                                                                                                                                                     12;
                                                                                                                                                                     Gaps
                                                                                               143
                                                                                                                      67
                                                                        127
                                                                                                                                                                     ٠.
```

```
TERBOLL PROCESS OF THE PROPERTY OF THE PROPERT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                   "C-erbB3 gene encodes secreted a tyrosine kinase.";
Biochem Biophys. Res. Commun. 1
-!- FUNCTION: BINDS AND IS ACTIV-
-!- CATALYTIC ACTIVITY: ATP + a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kraus M.H., Issing W., Miki T., Popescu N.C., Aaronson S.
"Isolation and characterization of ERBB3, a third member
ERBB/epidermal growth factor receptor family: evidence fo
overexpression in a subset of human mammary tumors.";
Proc. Natl. Acad. Sci. U.S.A. 86:9193-9197(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HOMO Sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ERB3_HUMAN P21860;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. MEDLINE-90311312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. MEDLINE-90083234; PubMed-2687875;
                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-93282822; Pulkatoh M., Yazaki Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-P
                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (SHORT FORM).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Todaro G.J., Shoyab M.;
"Molecular cloning and expression of an additional factor receptor related gene.";
Proc. Natl. Acad. Sci. U.S.A. 87:4905-4909(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ol-MAY-1991 (Rel. 18, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Receptor protein-tyrosine kinase erbB-3 precursor (EC 2.7.1.112)
(C_erbB3) (Tyrosine kinase-type cell surface receptor HER3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAY-1991
01-MAY-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plowman G.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           263
                                                                                        SHORT SECRETED FORM, EXIST DUE TO ALTERNATIVE SPLICING.

TISSUE SPECIFICITY: EPITHELIAL TISSUES AND BRAIM.

DOMAIN: THE CYTOPLASMIC PART OF THE RECEPTOR MAY INTERACT WITH THE SH2 OR SH3 DOMAINS OF MANY SIGNAL-TRANSDUCING PROTEINS.

PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE RESIDUES AND PROMOTES ITS ASSOCIATION WITH THE P85 SUBUNIT OF PHOSPHATIDYLINOSITOL 3-KINASE (BY SIMILARITY).

DISEASE: OVEREXPRESSED IN A SUBSET OF HUMAN MAMMARY TUMORS.

SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                               SECRETED (SHORT FORM).
ALTERNATIVE PRODUCTS: TWO FORMS, A LONG TRANSMEMBRANE FORM
                                                                                                                                                                                                                                                                                       tyrosine phosphate. SUBUNIT: HETERODIMER WITH EACH OF THE OTHER ERBB
                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٢
                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGPKHSDCLACLHENHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIGSSGCGRCHKSCTG-RCWGPTENHCQTLTRTVCAEQCDGRCYGPYVSDCCHRECAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CSGPKDTDCFACMNFNDSGACVTQCPQTFVYNPTTFQLEHNFNAKYTYGAFCVKKCPHNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Rel. 18, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Whitney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                PubMed=7685162;
Y., Sugimura T.,
codes secreted as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=2164210;
tney G.S., Neubauer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G.S.,
                                                                                                                                                                                                                                                             TYPE I MEMBRANE PROTEIN (LONG FORM) AND
                                                                                                                                                                                                                                                                                                                                      ACTIVATED
                                                                                                                                                                                                                                                                                                                                   192:1189-1197(1993).
IVATED BY NEUREGULINS AND
                                                                                                                                                                                                                                                                                                                                                                                   as
                                                                                                                                                                                                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                                                 Terada N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .G.,
                                                                                                                                                                                                                                                                                                                      tyrosine -
                                                                                                                                                                                                                                                                                                                                                                                                 .
                                                                                                                                                                                                                                                                                                                                                                                 transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Green J.M., McDonald V.L.,
                                                                                                                                                                                                                                                                                                                      ADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   epidermal growth
                                                                                                                                                                                                                                                                                          RECEPTORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for
                                                                                                                                                                                                                                                                                                                        +
                                                                                                                                                                                                                                                                                                                                    NTAK
                                                                                                                                                                                                                                                                                                                                                                                receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of P
                                                                                                                                                                                                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                               AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237
                                                                                                                                                                                                                               ×
 VARSPLIC
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                  CARBOHYD
CARBOHYD
                                                                                                                                                                                                                               CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                           DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000494; I
InterPro; IPR000719; I
InterPro; IPR002174; I
InterPro; IPR001245; 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SMART; SM00261; FU; 3.
SMART; SM00229; TyrKc; 1.
PROSITE; PS00107; PROTEIN_KINASE_ATP; FALSE_NEG.
PROSITE: PS00109; PROTEIN_KINASE_TYR; FALSE_NEG.
PROSITE: PS50011; PROTEIN_KINASE_DOM; 1.
Transmembrane: Glycoprotein; Multigene family; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BINDING
                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00069; pkinase; 1.
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genew; HGNC:3431; ERBB3 MIM; 190151; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP; P11362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; S61953; AAB269
PIR; A36223; A36223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProDom; PD000001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M29366; AAA35790.1;
M34309; AAA35979.1;
S61953; AAB26935.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
   184
560
1064
1342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Spl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         e: Glycoprotein; Multigene family; Receptor; Signal;Tyrosine-protein kinase; ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             icing
 Ą,
               1342
560
1064
                                                                                           Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19
    148097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGFR_L_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Euk_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _pkinase
                                                                                                                                                                                                                                                           EILSGGYYIEKNDKLCHMDTIDWRDIVRDRDAEIVVKDNGR
SC -> GQFPMVPSGLTPQPAQDWYLLDDDPRLLTLSASSK
VPVTLAAV (IN SHORT ISOFORM).
E -> G (IN SHORT ISOFORM).
E -> G (IN REF. 2).
                                                                                                                                     N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                N-LINKED
N-LINKED
N-LINKED
                                                                                                        N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EXTRACELLULAR
                                                                                                                                                                                                                                                          Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                   Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BY SIMILARITY). (BY SIMILARITY).
                                                                                                                                    PROTEIN-TYROSINE KINASE ERBB-3.
LULAR (POTENTIAL).
                                                                                                         (GLCNAC
                                                                                                                      (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL).
```

(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).

(POTENTIAL)

Length

1342;

```
RANGE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Ma
Best Loc
Matches
                                                                                 Cantrell M.A., Anderson D., Cerretti D.I
Tushinski R.J., Mochizuki D.Y., Larsen I
"Cloning, sequence, and expression of a
colony-stimulating factor.";
Proc. Natl. Acad. Sci. U.S.A. 82:6250-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lee F., Yokota T., Otsuka T., Gemmell L., Laisun N., Last K.-I., Rennick D.;

"Isolation of cDNA for a human granulocyte-macrophage
"Isolation of cDNA for a human granulocyte-macrophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                 cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Granulocyte-macrophage colony-stimulating factor (Colony-stimulating factor) (CSF) (Sargramostim)
SEQUENCE FROM N.A MEDLINE-85218749; Wong G.G., Witek
                                                                                                                                                                                       SEQUENCE FROM N.A. MEDLINE-85298329; PubMed-3898082;
                                                                                                                                                                                                                                                         "Genomic cloning, activity of human Proc. Natl. Acad.
                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE-86205844; Publ
Kaushansky K., O'Hara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=85242684; PubMed=3925454;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Colony-stimulating CSF2 OR GMCSF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1986
15-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P04141;
01-NOV-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CSF2_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GVCVASCPHNEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ASCVTACPYNYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HKNNQLALTIIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGC-ARCKGPLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LGLLF--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LGFLFLLFFWLDRSVLAKELARGAA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RDRD---AEIVVKDNGRSCPPCHEVCKG-RCWGPGSEDCQTLTKTICAPQCNGHCFGPNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EVVMGNLEIVLTGHNADLSFLQWIREVTGYVLVAMNEFSTLPLPNLRVVRGTQVYDGKFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NQCCHDECAGGCSGPQDTDCFACRHFNDSGACVPRCPQPLVYNKLTFQLEPNPHTKYQYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IFVM-----LNYNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           139;
                                                                                                                                                                                                                                                                                                                                                                                                                             Natl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Rel. 03, Created)
(Rel. 03, Last sequence up
(Rel. 41, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
    J.S.,
  PubMed=3923623;
J.S., Temple P.A.,
                                                                                                                                                                                                                                                                                                                                        PubMed=3486413;
Hara P.J., Berkner
                                                                                                                                                                                                                                                                                                                                                                                                                             Sci.
                                                                                                                                                                                                                                                         granulocyte-macrophage colony-stimulating Sci. U.S.A. 83:3101-3105(1986).
                                                                                                                                                                                                                                                                                                 characterization, and multilineage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----SLARGSEVGNSQAVCPGTLNGLSVTGDAENQYQTLYKLYERC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----NSSHALRQLRLTQLTEILSGGVYIEKNDKLCHMDTIDWRDIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                           S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 697; DB
Pred. No. 5.4e
45; Mismatches
                                                                                     82:6250-6254(1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata;
Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                         82:4360-4364(1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -STQVCTGTDMKLRLPASPETHLDMLRHLYQGC
                                                                                                                                                                                                                                                                                                                                          ...
.
    Wilkens K.M.,
                                                                                                  ນ.P.,
ຈກ A., Gi
ຈ human ຸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                        Segal G.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
.4e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋧
                                                                                                                      Price V., McKereghan K.,
Grabstein K., Cosman D.;
man granulocyte/macrophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        precursor (GM-C
(Molgramostin).
    Leary
                                                                                                                                                                                                                                                                                                                                        Hagen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Euteleostomi
                                                                                                                                                                                                                                                                             growth-promoting
ulating factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mammalian
    A.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>ب</u>
                                                                                                                                                                                                                                                                                                                                          Ŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GM-CSF)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30;
                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7;
```

EMBL;

M13207; M11734; M11220;

AAA52122.1; AAA52578.1;

.: .: .:

EMBL; or send modified

an

use the

European Bioinformatics Institute.

There are no rest

restrictions

9

is for

.ch/announce/

http://www Usage

non-profit institutions as long and this statement is not removed requires a license agreement (See

equires a license agreement (S email to license@isb-sib.ch).

```
Davis C.A., Kadner K., Miguel Subramanian S., Martin C.H.; Submitted (MAR-1998) to the EM [7]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Luxenberg
Shoemaker
Clark S.C.
                                                                                                             This SWI
between
                                                                                                                                                                                                                                                                                                                                                                                                                                 Diederichs K., Boone T., Karplus P.A.;
"Novel fold and putative receptor binding granulocyte-macrophage colony-stimulating Science 254:1779-1782(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human granulocyte macrophage colony-stimulating factor in genetical engineered and normal mesenchymal cells.";
Biochemistry 31:1881-1886(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A., AND VARIANTS ILL Rieder M.J., Carrington D.P., Chung Nickerson D.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Miyatake S., Otsuka T., rokota "Structure of the chromosomal g stimulating factor: comparison EMBO J. 4:2561-2568(1985).
                                                                                                                                                                                                                                                                                                                   macrophage colony-stimulating fac
J. Mol. Biol. 224:1075-1085(1992)
-!- FUNCTION; CYTOKINE THAT STIMU
                                                                                                                                                                                                                                                                <del>-</del> <del>-</del> <del>-</del> <del>-</del>
                                                                                                                                                                                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
MEDLINE-92235844; PubMed-1569568;
Walter M.R., Cook W.J., Ealick S.E., N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    purification
                                                                                                                                                                ÷
                                                                                                                                                                                                                                          ÷
                                                                                                                                                                                                                                                                                                                                                                     Walter M.R.,
Bugg C.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-92108420; PubMed-1837174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-92144609;
Kaushansky K., Loj
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYDRATE-LINKAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-86030234; Pu
Miyatake S., Otsuka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                        "Three-dimensional structure of recombinant human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Human GM-CSF:
                                                                                                                                                            Leucomax (Novartis). Used in myeloid reconstitution following marrow transplant, bone marrow transplant engraftment failure delay, mobilization and following transplantation of autologo peripheral blood progenitor cells, and following induction chemotherapy in older adults with acute myelogenous leukemia. DATABASE: NAME-Leukine; NOTE-Clinical information on Leukine;
                                                                                                                                             DATABASE: NAME-Leukine; NOTE-Clinical information www-"http://www.imunex.com/patient/pa02e1.html"
                                                                                                                                                                                                                           PHARMACEUTICAL: Available Leucomax (Novartis). Used
                                                                                                                                                                                                                                                                  POLYMORPHISM:
                                                                                                                                                                                                                                                                               SUBUNIT: MONOMER.
                                                                                                                                                                                                                                                       ASTHMA.
                                                                                                                                                                                                                                                                                           GRANULOCYTES, MACROPHAGES,
                                                                                                                                                                                                                                                                                                     OF HEMATOPOIETIC PRECURSOR
                                                                                                             SWISS-PROT entry is copyright. It is produced through a casen the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ansky K., Lopez J.A., Brown C.B.;
of carbohydrate modification in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GM-CSF: molecular cloning
ation of the natural and
228:810-815(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (JUN-2001) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Golde D.W., K
                                                                                                                                                                                                                                                                  VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=3876930;
ka T., Yokota T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed-1737041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SITES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kaufman
                                                                                                                                                                                                                                                                  ILE-117 MAY BE A RISK FACTOR
                                                                                                                                                                                                                                                                                         STIMULATES THE GROWTH AND DIFFERENTIATION SOR CELLS FROM VARIOUS LINEAGES, INCLUDING ES, EOSINOPHILS AND ERYTHROCYTES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . . .
. . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
n of t
                                                                                                                                                                                                                                         under the names Leukine (Immunex)
                                                                                                                                                                                                                                                                                                                                            factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g of the complementary
recombinant proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ung M.-W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Connolly
Pitluck S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , Lee F., Arai K.-I.; of for granulocyte-macrophage the mouse and human genes.";
                                                                                                                                                                                                                                                                                                                                                                                 Nagabhushan T.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kay R.M., Or
Hewick R.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                                                                                                                                               site of factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               y K.S., Gunning
S., Pollard M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ND THR-117.
Lee K.L., I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Orr
                                                                                                                                                                                                                                                                                                                                                        granulocyte-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          y DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Poel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H
                                                                                                                                                                                                                                                                  FOR
                                                                                                                                                                                                                                                                                                                                                                                 Trotta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                   autologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 K.M.,
, Rojeski H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                secretion of genetically
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                 failure
                                                                                                                a collaboration
                                                                                                                                                                                                                                                                   ATOPIC
                                                                                                               outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           colony
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ĭ
                                                                                                                                                                                                               bone
```

Koland J.G.; of the

Rattus.

```
RESULT
ERB3_R
ID EI
AC QI
DT 11
DT 11
DT 11
DT 11
                                                                                                                                                                              Ş
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                         망
                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                               $\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\tex{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\t
                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 127
   ERB3_RAT STANDARD; rn1, d08799; Q629955; Created)
15-DEC-1998 (Rel. 37, Created)
15-JUN-2002 (Rel. 41, Last annotation update)
15-JUN-2002 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TURN
HELIX
TURN
HELIX
STRAND
HELIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                              TURN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                      HELIX
TURN
STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS00702; GM_CSF; 1.
Cytokine; Growth factor; Glycoprotein; Signal; 3D-structure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPRO00773; GM_CSF.
Pfam; PF01109; GM_CSF; 1.
PRINTS; PR00693; GMCSFACTOR.
ProDom; PD007349; GM_CSF; 1.
SMART; SM00040; CSF2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MIM;
 Receptor
                                                                                                                                                                                                                                                                                                                                                                                                                             HELIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Polymorphism;
                                                                                                                                                                                                                                           809
                                                                                                                                                                                                                                                                                                      548
                                                                                                                                                       137
                                                                                                                                                                                 899
                                                                                                                                                                                                              77
                                                                                                                                                                                                                                                                         17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BL; AC004511; AAC08707.1; -.
BL; AF373868; AAK51563.1; -.
R; A01853; FGHUGM.
R; C24636; C24636;
R; A25169; A25169.
                                                                                                                                                                                                                                                                      1CSG; 31-JAN-94.
2GMF; 08-NOV-96.
                                                                                                                                                                        DCWEPVQE 675
                                                                                                                                                                                                            DCWEPVQE 144
                                                                                                                                                                                                                                                                                                                                    al Similarity
127; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X03021; CAA26822.1;
M10663; AAA52121.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HGNC:2434; CSF2
                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                        Pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                               AĄ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113
138
22
24
26
27
27
44
115
                                                                                                                                                                                                                                                                                                                                                                                                                            27
44
44
60
60
81
103
104
119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         144
                                                                                                                                                                                                                                                                                                                                                 18.0%;
99.2%;
                                                                                                                                                                                                                                                                                                                                                                                               16295
                                                                                                                                                                                                                                                                                                                                                                                               M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O-LINKED.
O-LINKED.
                                                                                                                                                                                                                                                                                                                                 Score 674; DB 1;
Pred. No. 9.5e-31;
1; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /FTId=VAR_013089
I -> T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /FTId-VAR_001975
                                                                                                                                                                                                                                                                                                                                                                                              75D1E50506BCA7A8 CRC64
 arion update)
erbB-3 precu
   precursor
                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                             Length 144
   (E)
                                                                                                                                                                                                                                                                                                                                    Indels
   2.7.1.112)
                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                          667
                                                                                                                                                                                                                                                                       76
                                                                                                                                                                                                                                                                                                     607
                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ·....
   Transferase;
SIGNAL
CHAIN
CHAIN
TRANSMEM 6
DOMAIN 6
DOMAIN 1
DOMAIN 7
                                                                          Pfam; PF01030; Recep_L_domain; PRINTS; PR00109; TYRKINASE. Pr0D0m; PD0000001; Euk_pkinase; SMART; SM00261; FU; 5.
SMART; SM00219; TYrKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-Sprague-Dawley; TISSUE-Sciatic nerve;
MEDLINE-97184212; PubMed-9030624;
Carroll S.L., Miller M.L., Frohnert P.W., Kim S.S., Corbett J.A.;
"Expression of neuregulins and their putative receptors, ErbB2 and
ErbB3, is induced during Wallerian degeneration.";
J. Neurosci. 17:1642-1659(1997)
-I- FUNCTION: BINDS AND IS ACTIVATED BY NEUREGULINS AND NTAK.
-I- CATALYTIC ACTIVITY; ATP + a protein tyrosine = ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REVISIONS TO 85; 513
Hellyer N.J., Koland
Submitted (DEC-2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-Sprique-Dawley: TISSUE-Liver; MEDLINE-96096535; PubMed-8522190; MEDLINE-96096535; PubMed-8522190; Greaves C.H., Hellyer N.J., Kim H.-H., Greaves C.H., "Cloning of the rat ErbB3 cDNA and char
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                  HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hellyer N.J., Kim H.-H., G
"Cloning of the rat ErbB3
recombinant protein.";
Gene 165:279-284(1995).
                                                                                                                                                                                                                                                        Pfam;
                                                                                                                                                                                                                                                                       Pfam;
                                                                                                                                                                                                                                                                                     InterPro; IPR002174;
InterPro; IPR001245;
                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                        modified and this statement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tyrosine phosphate.
-!- SUBUNIT: HETERODIMER WITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 922-1097 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND PROMOTES ITS ASSOCIATION WITH THE P85 SUBUN-
PHOSPHATIDYLINOSITOL 3-KINASE.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: Type I membrane protein.

DOMAIN: THE CYTOPLASMIC PART OF THE RECEPTOR MAY INTERACT WITH THE SH2 OR SH3 DOMAINS OF MANY SIGNAL-TRANSDUCING PROTEINS.

PTM: LIGAND-BINDING INCREASES PHOSPHORYLATION ON TYROSINE RESIDUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SWISS-PROT entry is copyright. It is produced through a cen the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                        PF00069; pkinase; 1.
PF00757; Furin-like; 1.
                                                                                                                                                                                                                                                                                                                                               U29339; AAC28498.2; -.
U52530; AAC53050.1; -.
P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                    IPR000494;
                                                                                                                                                                                                                                                                                                                      IPR000719;
   20
644
663
183
707
   1339
643
662
1339
259
964
                                                                                                                                                                                                                                                                                                                                                                                                                                                        institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J.G.
                                                                                                                                                                                                                                                                                     Tyr_pkinase.
                                                                                                                                                                                                                                                                                                     Euk_pkinase.
Furin-like.
                                                                                                                                                                                                                                                                                                                                 EGFR_L_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                   Institute. There are no restrictions utions as long as its content is in is not removed. Usage by and for con
                 CYTOPLASMIC (POTENTIAL). CYS-RICH.
                                                            RECEPTOR PROTEIN-TYROSINE KINASE EXTRACELLULAR (POTENTIAL).
                                                POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EACH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ę
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .H., Sierke S.L., characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   THE
                                                                                                                                                                                                                                                                                                                                                                                                                          (See http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBUNIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ERBB
```

RECEPTORS

õ

a collaboration

```
RESULT
XMRK_XI
ID XN
AC PI
DT 01
DT 16
DT 16
                                                                                                                                                                                                                                                                                                                                        B 6
                                                                                                                                                                                                                                                                                                                                                                                                                              ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                     g
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NE_BIND
BINDING
BINDING
BINDING
ACT_SITE
DISULFID
                 XMRK_XIPMA STANDARD; PRT; 1167 AA. P1338; 01-JAN-1990 (Rel. 13, Created) 16-OCT-2001 (Rel. 40, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) 15-JUN-2002 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
     Melanoma
                                                                                                                                                      _XIPMA
                                                                                                                                                                                                                                                     285
                                                                                                                                                                                                                                                                                                     313
                                                                                                                                                                                                                                                                                                                                                                                                                                                  169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 43.7
mes 136; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      u
                                                                                                                                                                                                                                                                                                                                                                                                                                          VCVASCPHNEV
                                                                                                                                                                                                                                                                                                                                                QCCHDECAGGCSGPQDTDCFACRRFNDSGACVPRCPEPLVYNKLTFQLEPNPHTKYQYGG
                                                                                                                                                                                                                                                                                                                                                                      DCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTLQVLCFLL-----SLARGSEMGNSQAVCPGTLNGLSVTGDADNQYQTLYKLYEKCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GFLFLLFFWLDRSVLAKELARGAA---STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQ
                                                                                                                                                                                                                                                                                                   SCYTACPYNYL
       receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₹
                                                                                                                                                                                                                                                                                                   323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein-tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17.98;
43.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  147545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 668; DB
Pred. No. 2.1e
44; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₩. r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BY SIMILARITY
BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OAA5F2402BBFDF1E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (BY SIMILARITY). (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       668;
No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KED (GLCNAC. KED (
  kinase precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
.1e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
)(POTENTIAL).
(POTENTIAL).
)(POTENTIAL).
)(POTENTIAL).
)(POTENTIAL).
)(POTENTIAL).
     OH)
     2.7.1.112).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7;
       InterPro; IPR000494; EGFR_L_domain.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR002174; Furin-like.
InterPro; IPR002174; Furin-like.
InterPro; IPR0021290; Ser_thr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001290; Ser_thr.
InterPro; IPR001290; Furin-like; 1.
Pfam; PF000757; Furin-like; 1.
Pfam; PF001030; Recep_L_domain; 2.
PRINTS; PR00109; TYRKINASE.
PRODOM; PD000001; Euk_pkinase; 1.
SMART; SM00250; FU; 5.
SMART; SM00250; FU; 5.
SMART; SM00219; TyrKC; 1.
TYROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
PROSITE; PS00109; PROTEIN_KINASE_DOM; 1.
TYROSITE; PS0011; PROTEIN_KINASE_DOM; 1.
TYROSITE; PS0011; PROTEIN_KINASE_TYR; 1.
PROSITE; PS00101; PROTEIN_KINASE_TYR; 1.
TYROSITE; PS00101; PROTEIN_KINASE_TYR; 1.
  DOMAIN
TRANSMEM
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; X16891;
PIR; S06142; S
HSSP; P11362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outsit the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for concentitles requires a license agreement (See http://www.isb-sib.ch/aror send an email to-license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schartl M.;
Submitted (JUL-2000) to the
-!- FUNCTION: PROBABLE RECEP
-!- CATALYTIC ACTIVITY: ATP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xiphophorus maculatus (Southern platyfish).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;

Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha;

Cyprinodontiformes; Poeciliidae; Xiphophorus.

MCBI_TaxID=8083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-90015140; PubMed-2797166; Wiltbrodt J., Adam D., Malitschek B., Mau Telling A., Robertson S.M., Schartl M.; "Novel putative receptor tyrosine kinase inducing Tu locus in Xiphophorus.";
                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nature
[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REVISION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tyrosine phosphate.
SUBCELLULAR LOCATION: Type I membrane protein.
DISEASE: INVOLVED IN PIGMENT CELLS MALIGNANT ME
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                341:415-421(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TO 515.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1; CAA34770.2;
; S06142.
2; 1FGK.
     26
643
666
710
716
716
743
195
199
220
224
234
256
                                                                                                                                                                                                                                                                                                                                                                                             25
1167
       642
1167
977
724
743
835
204
212
228
236
245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 o the EMBL/GenBank/DDBJ databases.
RECEPTOR WITH PROTEIN-TYROSINE KINASE ACTIVITY.
RECEPTOR WITH PROTEIN - ADP + protein
KINASE,
EXTRACELLULAR (POTENTIAL
CYTOPLASMIC (POTENTIAL
CYTOPLASMIC (POTENTIAL
PROTEIN KINASE,
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ); 1.
); 1.
); 1.
); 1.
); 2.
); 2.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.
); 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 3.

]; 
                                                                                                                                                                                                                                                                                                                                                                                                                                             Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                             RECEPTOR PROTEIN-TYROSINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Maueler
                                                                                                                                                                                                                                                                                                (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                encoded
                                                                                                                                                                                                                                                                                                                                                (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MELANOMAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Raulf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the melanoma-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .-
                                                                                                                                                                                                                                                                                                                                                                                                                                             Proto-oncogene
```

collaboration -L outstation outstation in no way

```
S
                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                              Query Ma
Best Loc
Matches
                                    Ovis aries (Sheep).
Eukaryota; Metazoa; Metazoa;
Mammalia; Eutheria; Geprinae; On NCBI_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                  CSF2_SHEEP STANDARD; PRT; 144 AA. P28773; P28773; Created) 01-DEC-1992 (Rel. 24, Created) 01-DEC-1992 (Rel. 24, Last sequence update) 01-OCT-1996 (Rel. 34, Last annotation update) Granulocyte-macrophage colony-stimulating factor) (CSF).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
CARBOHYD
CARBOHYD
SEQUENCE FROM N.A.
MEDLINE-92039044; PubMed-1937025;
MCInnes C.J., Haig M.C.K.;
"Cloning and expression of a cDNA
                                                                                                                                            SHEEP
                                                                                                                                                                                                                                                                                                                                                           y Match
Local Similarity
ches 142; Conserv
                                                                                                                                                                           315
                                                                                                                                                                                                         264
                                                                                                                                                                                                                        282
                                                                                                                                                                                                                                       204
                                                                                                                                                                                                                                                      223
                                                                                                                                                                                                                                                                     144
                                                                                                                                                                                                                                                                                    163
                                                                                                                                                                                                                                                                                                                   103
                                                                                                                                                    13
                                                                                                                                                                                                                                                                                                    87
                                                                                                                                                                                                                                                                                                                                 30
                                                                                                                                                                                                                                                                                                                                                 43
                                                                                                                                                                                                      QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY
                                                                                                                                                                           CSA-----
                                                                                                                                                                                                                                              CWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                                                                                                                                                                                                                                                  VLIAMNEVSTIPLVNLRLIRGONLYEGNFTLLVMSNYQK-NPSSP--DVYQVGLKQLQLS
                                                                                                                                                                                                                                                                                                            VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR
                                                                                                                                                                                                                                                                                                                                 KVCQGTSNQMTM----LDNHYLKMKKMYSGCNVVLENLEITYTQENQDLSFLQSIQEVGGY
                                                                                                                                                                                         SSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGA
                                                                                                                                                                                                                                      CWAPGPGHCQKFTKLLCAEQCNRRCRGPKPIDCCNEHCAGGCTGPRATDCLACRDFNDDG
                                                                                                                                                                                                                                                                     NLTEILSGGVKVSHNPLLCNVETINWWDIVDKTSNPTMNLIPHAFERQCQKCDHGCVNGS
                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                              Ą
                                                                                                                                                                          -GMLEVDENGKRS-CKPCDGVCPKVCDG-IGIGS
                                               Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                      Chordata; Craniata; Vertebrata;
Cetartiodactyla; Ruminantia; Pe
                                                                                                                                                                                                                                                                                                                                                                      17.5%;
                                                                                                                                                                                                                                                                                                                                                                                              129934
                                                                                                                                                                                                                                                                                                                                                               46;
                                                                                                                                                                                                                                                                                                                                                                                                    BY SIMILA
                                                                                                                                                                                                                                                                                                                                                                     Score 655.5;
Pred. No. 8.0
 CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Y SIMILARITY.
Y SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                             4793E0749DC1D55A
 encoding
                                                                                                                                                                                                                                                                                                                                                                                                   GLCNAC.

GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                       .6e-29;
                                                                                             factor
                                                                                                                                                                                                                                                                                                                                                                              DB
 ovine
                                                                                                                                                                                                                                                                                                                                                               130;
                                                                                                                                                                                                                                                                                                                                                                             1;
                                                                                             precursor
                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                          348
                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL).
                                                              Eutel
                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL)
                                                      Bovoidea
                                                                                                                                                                                                                                                                                                                                                                              1167;
                                                                                                                                                                                                                                                                                                                                                               27:
                                                                                            (GM-CSF)
                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                 98
                                                                                                                                                                                                                                                                                                                                                102
                                                                                                                                                                                                                                      263
                                                                                                                                                                                                                                                     281
                                                                                                                                                                                                                                                                                   222
                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                                                                         RESULT 14
EGFR_DROME
 RRRRR OCCOOC OCT TO THE
                                                                                                                                                                                                      S
                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This
                                                                                                                                                                                                        899
                                                                                                                                                                                                                                      809
                                                                                                                                                                                                                                                                    548
                                                                                                                                                                                         137
                                                                                                                                                                                                                       77
                                                                                                                                                                                                                                                      17
```

```
EMBL; XJJC, SHOW, EMBL; XJC, SHOW, EMBL; XJC, SMF.

HSSP; P04141; 2GMF.

A InterPro; IPR000773; GM_CSF.

JR Pfam; PF01109; GM_CSF; 1.

DR PRINTS; P800693; GMCSFACTOR.

"""Dom; P0007349; GM_CSF; 1.

"""Dom; P0007349; GM_CSF; 1.

"""CSF2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Sin
Matches 102;
                                                                                                                             Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Mandibulata;
Insecta; Pterygota; Neoptera; Endopterygota;
Muscomorpha; Ephydroidea; Drosophilidae; Dros
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
DISULFID
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cytokine;
SIGNAL
                                                                                                                                                                                                                        EGFR_DROME STANDARD: PRT; 1426 AA. P04412; O61601; O9942G0; P81868; 13-AUG-1987 (Rel. 05, Created) 15-DEC-1998 (Rel. 37, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) Epidermal growth factor receptor precursor (EC 2 (Gurken receptor) (Torpedo protein) (Drosophila EGFR OR TOP OR C-ERBB OR DER OR CG10079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       granulocyte-macrophage colony-stimulating facto 
Gene 105:275-279(1991).
-I- FUNCTION: CYTOKINE THAT STIMULATES THE GROW 
OF HEMATOPOIETIC PRECURSOR CELLS FROM VARIO 
GRANULOCYTES, MACROPHAGES, EOSINOPHILS AND
                                                         SEQUENCE FROM N.A. (ISOFORMS TYPES MEDLINE=94350209; PubMed=8070664; Clifford R., Schupbach T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the European Bioinformatics Institute. 19 use by non-profit institutions as low modified and this statement is not remove entities requires a license agreement (Storement an email to license@isb-sib.ch).
Clifford R. Schupbach T.;
Molecular analysis of the Drosophila EGI
that several genetically defined classes
subdomains of the receptor protein.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY).
SUBUNIT: MONOMER (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL European Bioinformatics Institute. There are no restrict by non-profit institutions as long as its content is fied and this statement is not removed. Usage by and for the statement is not removed. Usage by and for the statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DCWEPVQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Growth factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          113
138
44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14.78;
79.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein; Signal.
BY SIMILARITY.
GRANULOCYTE-MACROPHAGE
FACTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC...
W; ABAAC8733B580008 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 549; DB 1;
Pred. No. 6.4e-24;
1; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ES THE GROWTH AND DIFFERENTIATION FROM VARIOUS LINEAGES, INCLUDING
                                                                                               AND
                                       EGF
                                                                                                                                                     ata; Pancrustacea;
ota; Diptera; Brac
Drosophila.
                     of.
                                       receptor homolog reveals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     factor.";
                     alleles
                                                                                                                                                                                                                                                    2.7.1.112)
a relative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ERYTHROCYTES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                     cluster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COLONY - STIMULATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          restrictions
                                                                                                                                                                          Brachycera;
                                                                                                 . .
                                                                                                                                                                                                                                                    ) (Egfr)
of ERBB).
                                                                                                                                                                                              Hexapoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

Genetics 137:531-550(1994). [2]

MEDLINE-85137938; PubMed-2983232;

۵ ::

```
Addams N.D., Calniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams N.D., Calniker S.E., Kichards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Brandon R.C., Rogers Y.H.C., Blazej R.G., Champe M., Freiffer B.D.,
RA Brandon R.C., Rogers Y.H.C., Blazej R.G., Champe M., Preiffer B.D.,
RA Brandon R.C., Rogers Y.H.C., Blazej R.G., Champe M., Preiffer B.D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Berkova D., Botchan M.R., Bouck J., Broktein P., Brottier P.,
RA Burtis K.C., Blazen D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Borkova D., Botchan A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Borkova D., Botchan A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Borkova D., Botchan A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies C., Dunn P.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Mattel B., McIntosh T.C., Kravitz S., Kulp D., Lai Z.,
Liang Y., Lin X.,
Liu X., Mattel B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
Lanko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
Liu X., Mattel B., McIntosh T.C., McLeod M.P., McPherson D.L.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Nelson D.L.,
RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Nelson D.R., Nelson K.A., Sinpson M., Skupski M.P., Smith T.,
Spier E., Spradling A.C., Stapleton M., Stupski M.P., Smith T.,
RA Shue B.C., Schen H., Shong K., Shong K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-Oregon-R; TISSUE-Embryo;
MEDLINE-87002474; PubMed-3093080;
Schejter E.D., Segal D., Glazer L., Shilo B.-Z.;
"Alternative 5' exons and tissue-specific expression
Drosophila EGF receptor homolog transcripts.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-99102120; PubMed-9882502;
LesoKhin A.M., Yu S.-Y., Katz J., Baker N.
"Several levels of EGF receptor signaling
specification in wild-type, Ellipse, and n
Dev. Biol. 205:129-144(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hormone binding and Kin
Cell 40:599-607(1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A., AND ALTERNATI
MEDLINE-85124611; PubMed-2982499;
Livneh E., Glazer L., Segal D., S
   STRAIN-Daekwanryeong;
                                        SEQUENCE
                                                                                                      Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-Berkeley;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ANALYSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     eh E., Glazer L., Segal D
Drosophila EGF receptor
one binding and kinase do
                                                                                                  genome sequence of Drosophila nce 287:2185-2195(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         æ
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FROM N.A. (ISOFORM TYPE I).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FROM N.A.,
                                     OF 959-1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FROM N.A. (ISOFORM TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R., Schupbach
(MAR-1998) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PubMed-10731132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHARACTERIZATION,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AND ALTERNATIVE SPLICING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or gene homolog: domains.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schlessinger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ľ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Baker N.E.;
ignaling during photoreceptor
se, and null mutant Drosophila.";
                                                                                                                                 melanogaster.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE SPECIFICITY, AND MUTATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALTERNATIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٦
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shilo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ) B.-Z.;
on of both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPLICING
      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGF receptor
Cell 89:13-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-92038942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wadsworth S.C., Vincent W.S. III, Bi
"A Drosophila genomic sequence with
growth factor receptor.";
Nature 314:178-180(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "There must be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Perrimon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-97248481;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Raz E., Schejter E.D., Shilo B.Z.;
"Interallelic complementation among DER/flb alleles: implications the mechanism of signal transduction by receptor-tyrosine kinases Genetics 129:191-201(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATALLAL CONTROL TO THE TOTAL TO THE TOTAL TO THE TOTAL THE TOTAL 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 89:13-16(1997).

1 89:13-16(1997).

FUNCTION: BINDS TO FOUR LIGANDS: SPITZ, GURKEN, VEIN AND ARGOS, WHICH IS AN ANTAGONIST. TRANSDUCES THE SIGNAL THROUGH THE RAS-RAF-WHICH IS AN ANTAGOLYED IN A MYRIAD OF DEVELOPMENTAL DECISIONS.

CRITICAL FOR THE PROLIFERATION OF IMAGINAL TISSUES, AND FOR THE DETERMINATION OF BOTH THE ANTERO-POSTERIOR AND DORSO-VENTRAL POLARITIES OF THE OCCUPIE. IN THE EMBRYO, PLAYS A ROLE IN THE ESTABLISHMENT OF VENTRAL CELL FATES, MAINTENANCE OF AMNIOSEROSA AND VENTRAL NEUROECTODERMAL CELLS, GERM BAND RETRACTION, CELL FATE SPECIFICATION IN THE CENTRAL NERVOUS SYSTEM AND PRODUCTION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AND THORACIC AND ABDOMINAL GANGLIA.
SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE III, ARE PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: UBIQUITOUSLY EXPRESSED IN EMBRYOS. IN L
UNIFORM EXPRESSION IS SEEN IN WING DISKS, GENITAL DISK, ANL
TESTIS AND OVARY, AND BRAIN CORTEX. IN EYE-ANTENNA DISK, HI
EXPRESSION IS ANTERIOR TO MORPHOGENETIC FURNOW, LEVELS REMA
IN PHOTORECEPTOR PRECURSOR CELLS. THIS PATTERN IS REVERSED
POSTERIOR EYE DISK. IN ADULTS EXPRESSION IS HIGH IN BRAIN C
                       AF052754; AAC08536.1;
AF052754; AAC08535.1;
AF052752; AAC08535.1;
K03054; AAA51462.1;
K03411; AAA51462.1;
K03414; AAA51461.1;
AF109077; AAA51461.1;
AF109078; AAA5132.1;
AF109078; AAD26132.1;
AF109078; AAD26132.1;
AF109078; AAD26132.1;
AF109079; AAD26132.1;
AF109079; AAD26133.1;
AF109084; AAD26133.1;
AF109089; AAD26133.1;
AF109089; AAD26131.1;
AF10908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATALYTIC ACTIVITY: ATP + a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALTERNATIVE PRODUCTS: 3 ISOFORMS; TYPE I (SHOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CUTICLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OF 1133-1137; 1155-1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            equires a license agreement email to license@isb-sib.ch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perkins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50
AAD26130.
AAD26130.
AAD26130.
AAD26131.
AAD26131.
AAD26131.
AAD26135.
AAF46732.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pubMed=9094709;
ins L.A.;
ways to rule the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed-1936959;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOINED
                                                                                                                             JOINED
                                                                                                                                                                                                 JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein tyrosine -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bilodeau-Wentworth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        signal: the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1209-1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         I AND TYPE II ARE TYPE IS A TYPE III MEMBRANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ៩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           case
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HERE),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N.A., AND MUTATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of the Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                epiderma]
```

protein

TYPE II

AND

LARVAE

QF

REMAIN HIGH RSED IN ANLAGEN HIGHEST CORTEX

EMBL;

X02293; CAA26157.1; X78920; CAA55523.1; X78918; CAA55521.1; X78919; CAA55522.1;

. . . .

```
RESULT
CSF2_CE
ID CS
AC P5
AC P5
DT 01
DT 01
DT 01
DT 01
DT ()
CG (C
                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                          ş
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
CSF2_CEREL STANDAND,
P51748;
01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation update)
01-OCT-1996 (Rel. 34, Last annotation update)
Granulocyte-macrophage colony-stimulating fac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FlyBase; FBgn0003731; E
InterPro; IPR000494; EC
InterPro; IPR000719; Ev
InterPro; IPR002174; Ev
InterPro; IPR001245; Ty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NP_BIND
BINDING
ACT_SITE
                                                                                                       CEREL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
Transmembrane; Glycoprotein; Receptor; Phosphorylation;
Tyrosine-protein kinase; ATP-binding; Signal; Alternativ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRINTS; PRO0109; TYRKINASE.
ProDom; PD000001; Euk_pkina
SMART; SM00261; FU; 7.
SMART; SM00219; TyrKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF01030; Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR; A00640; GQFFE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Developmental
                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                        373
                                                                                                                                                                               326
                                                                                                                                                                                                       314
                                                                                                                                                                                                                               266
                                                                                                                                                                                                                                                      255
                                                                                                                                                                                                                                                                              208
                                                                                                                                                                                                                                                                                                                               148
                                                                                                                                                                                                                                                                                                                                                         151
                                                                                                                                                                                                                                                                                                                                                                               93
                                                                                                                                                                                                                                                                                                                                                                                                 . 95
                                                                                                                                                                                                                                                                                                                                                                                                                             34 ELARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPT-NASLSF
                                                                                                                                                                                                                                                                                                                                                                   DVGS
                                                                                                                                                                                                    PTQKDCIACKNFFDEAVSKEECPPMRKYNPTTYVLETNPEGKYAYGATCVKECP-GHLLR
                                                                                                                                                                                                                                                                   SRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCA--RCKGPLPTDCCHEQCAAGCTG
                                                                                                                                                                                                                                                                                                                            VTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNR
                                                                                                                                                       DNGA
                                                                                                                                                                                                                             PKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLST
                                                                                                                                                                                                                                                    ERECPKCHESCTHG-CWGEGPKNCQKFSKLTCSPQCAGGRCYGPKPRECCHLFCAGGCTG
                                                                                                                                                                                                                                                                                                     ----TYSKMYTLEIPDLRDVLNGQVGFHNNYNLCHMRTIQWSEIVSNGTDAYYNYDFTAP
                                                                                                                                                                                                                                                                                                                                                      LDNIREVTGYILISHVDVKKVVFPKLQIIRGRTLFSLSVEEEKYALFV-------
                                                                                                                                                                                                                                                                                                                                                                                                      EFVKG----KICIGTKSRLSVPSNKEHHYRNLRDRYTNCTYVDGNLKLTWLPNENLDLSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Similarity
112; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PF00069; pkinase; 1. PF00757; Furin-like; 1.
                                                                                                                                                        376
                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | protein.
| 1 30
| 31 1426
| 31 868
| 389 889
| 390 1426
| 338 1198
| 344 952
| 371 971
| 363 1063
| 302 902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                14.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euk_pkinase.
Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tyr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGFR_L_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Egfr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 536; DB 1;
Pred. No. 3.6e-22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATP (BY SIMIL
BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC (POTENTIAL) PROTEIN KINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.

EPIDERMAL GROWTH FACTOR RECEPTOR

EXTRACELLULAR (POTENTIAL).

POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PHOSPHORYLATION (BY PKC) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (BY SIMILARITY).
                           factor precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                       118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        splicing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       30;
                                                                                                                                                                                                                              325
                                                                                                                                                                                                                                                                            265
                                                                                                                                                                                                                                                                                                    254
                                                                                                                                                                                                                                                                                                                                                     198
                                                                                                                                                                                                                                                                                                                                                                                                      150
                                                                                                                                                                                                                                                                                                                                                                                                                               92
```

Search completed: April Job time: 21.4231 secs

28,

2003, 13:40:04

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                         SOUTH THE TENT OF 
                                              Ş
                                                                                                     밁
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                          Š
밁
                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; U14392; AAA21439.1; -.
HSSP; P04141; 2GMF.
InterPro; IPR000773; GM_CSF.
Pfam; PF01109; GM_CSF; 1.
PRINTS; PR00593; GMCSFACTOR.
PRODOm; PD007349; GM_CSF; 1.
SMART; SM00040; CSF2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
DISULFID
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                between the Swiss Institute of Bioinformatics and the EMBL outst
the European Bioinformatics Institute. There are no restrictions
use by non-profit institutions as long as its content is in
modified and this statement is not removed. Usage by and for com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cervus elaphus (Red deer).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervoide
Cervidae; Cervinae; Cervus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cytokine;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
Lockhart E.A.;
Submitted (SEP-1994)
-!- FUNCTION: CYTOKIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS00702; GM_CSF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID-9860;
137
                                                                                                                                                         809
                                                                                                                                                                                                                                      548 AAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEPTCLQTRL
                                                                                                     77
                                                                                                                                                                                                              17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mitted (SEP-1994) to the EMBL/GenBank/DDBJ databases. FUNCTION: CYTOKINE THAT STIMULATES THE GROWTH AND DIFFE. OF HEMATOPOLETIC PRECURSOR CELLS FROM VARIOUS LINEAGES, GRANULOCYTES, MACROPHAGES, EOSINOPHILS AND ERYTHROCYTES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBUNIT: MONOMER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GRANULOCYTES, MACROPHAGES,
                              DCWEPVQE
                                                                                                                                 ELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPF
                                                                                                  KLYKQGLRGSLTSLSGSLTMMARHYEQHCPPTQETSCETQTITFKSFKENLKDFLFIIPF
                                                                                                                                                                                                              SAPTRPASPVTRPWQHVDAIKEALSLLNHSSDTAAVMNETVEVVSEMFDSQEPTCLQTRL
DCWEPAQK
                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                      71
105
44
54
144 AA;
                                                                                                                                                                                                                                                                                                                      Conservative
                                                 675
144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          try is copyright. It is produced through a collaboration institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                  113
138
44
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144
                                                                                                                                                                                                                                                                                                                                                                                                                            16283
                                                                                                                                                                                                                                                                                                                                         14.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Glycoprotein; Signal.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                            WW:
                                                                                                                                                                                                                                                                                                                 11;
                                                                                                                                                                                                                                                                                                                                                                                                                      FACTOR.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC...
N-LINKED (GLCNAC....
1F5FF5FD03C94394 CF
                                                                                                                                                                                                                                                                                                                                            Score 529;
Pred. No. 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GRANULOCYTE-MACROPHAGE COLONY-STIMULATING
                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ruminantia; Pecora; Cervoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                 DB 1; I
7.9e-23;
nes 19;
                                                                                                                                                                                                                                                                                                                                                                  Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                   Indéls
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DIFFERENTIATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INCLUDING
                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      commercial
                                                                                                     136
                                                                                                                                                                                                              76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                 6
```

```
Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                               Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                      721
717.5
714.5
697
674
655.5
549
549
545
549
545
549
545
549
545
                                                                                                                                                                                                                                                                              1935
755.5
                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                  754
                                                                                                             441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                   Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                     PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      April 28, 2003, 13:38:09 ; Search time 25.3846 Seconds (without alignments) 2613.108 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       283224 seqs, 96134422 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-821-883-2
3739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MRAAPLLLARAASLSLGFLF......EPVQEGAPPPPAAAHHHHHH 690
                                                                                                                                                                            52.2
52.2
51.8
51.8
20.2
20.2
20.2
119.3
119.3
119.3
119.3
119.3
119.3
119.3
119.7
119.7
14.7
14.6
112.7
112.7
112.8
110.8
110.8
110.4
110.0
9.1
10.0
9.1
8.9
8.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                   Length DB
                                S70712
S70713
                                                                                                                      FQB0GM
A44936
                                                                                                                                                                                                                                                                                                                                    H
                                                                                                                                                       A61632
                                                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   283224
                 epidermal growt
granulocyte-mad
epidermal growt
epidermal growt
epidermal growt
                                                                                                                                                                                                          epidermal growt
epidermal growt
epidermal growt
epidermal growt
epidermal growt
kinase-related
                                                                                                                                                                                                                                                                          protein-tyrosir
protein-tyrosir
p-185 precursor
epidermal growt
                                                                                               granulocyte-ma
protein let-23
                                                                                                                                                                                     granulocyte-ma
epidermal grow
                                                                                                                      granulocyte-ma
                                                                                                                                 granulocyte-ma
                                                                                                                                          epidermal grow
                                                                                                                                                     granulocyte-ma
                                                                                                                                                               granulocyte-ma
                                                                                                                                                                                                                                                                                                                                   Description
                                                                                      protein-tyrosi
                                                                                                                                                                            protein-tyrosi
          epidermal
                                                                          protein-tyrosi
```

44	43	42	41	40	39	38	37	36	35	34	ω ω	32	31	30	
20 <b>7</b> 188	223.5	231.5	235.5	235.5	238	246	246.5	249	252	252.5	256.5	270.5	270.5	273.5	
5. 05	6.0	6.2	6. u	6.3	6.4	6.6	6.6	6.7	6.7	6. 8	6.9	7.2	7.2	7.3	
1390 1846	329	1268	1371	183	540	1367	1300	1383	1607	1372	1382	2148	2101	1477	
N N	ν	2	N	N	N	ب	N	N	N	N	ᆫ	Н	N	N	
T30346 T42047	A48805	B36502	A33837	JH0803	B47417	IGHUR1	A36502	A36080	T43212	A34157	INHUR	A56081	S57245	T18534	
insulin receptor - insulin receptor h	insulin-like growt	insulin receptor-r	insulin-like growt	tyrosine kinase re	insulin receptor-r	insulin-like growt	insulin receptor-r	insulin receptor p	insulin-like growt	insulin receptor p	insulin receptor p	insulin receptor -	insulin receptor (	protein-tyrosine k	

## ALIGNMENTS

RESULT 1 A24571

protein-tyrosine kinase (EC 2.7.1.112) erbB2 precursor - human N;Alternate names: c-erb-B-2 protein precursor; kinase-related transforming protein C;Species: Homo sapiens (man) c;Date: 25-oct-1987 #sequence\_revision 06-Dec-1996 #text\_char.ge 11-Jun-1999 c;Accession: A24571; A25491; A44188; B44188; B15509; I57622

æ

A; Residues: 1-191 <tal></tal>	growt
A) MOIECULE Type: DNA	שלח ד
A;Status: translated from GB/EMBL/DDBJ	wth f
A; Accession: 157622	wth f
A; Reference number: 157622; MUID: 87286898; PMID: 3039351	wth f
A; Title: Human HER2 (neu) promoter: evidence for multiple mechanisms for transcriptio	acrop
Mol. Cell. Biol. 7, 2597-2601, 1987	wth f
R; Tal, M.; King, C.R.; Kraus, M.H.; Ullrich, A.; Schlessinger, J.; Givol, D.	ine k
A;Cross-references: GB:L29395; NID:g459807; PIDN:AAA35809.1; PID:g459808	ine k
A; Residues: 832-909 < REX>	3 (1m
A; Molecule type: DNA	lacrop
A; Status: translated from GB/EMBL/DDBJ	lacrop
A;Accession: I59509	lacrop
A;Reference number: 159509; MUID:85272597; PMID:2992089	wth f
A; Title: Amplification of a novel v-erbB-related gene in a human mammary carcinoma.	acrop
Science 229, 974-976, 1985	lacrop
R;King, C.R.; Kraus, M.H.; Aaronson, S.A.	ine k
A;Cross-references: GB:M11730; NID:g183986	wth f
A; Residues: 1-517, 'RALL', 522, 'S', 524-654, 'V', 656-1169, 'A', 1171-1255 <cou2></cou2>	acrop
A; Molecule type: mRNA	d tra
A;Accession: B44188	wth f
A;Cross-references: GB:M12036; NID:g183988; PIDN:AAA35978.1; PID:g183989	wth f
A; Residues: 740-910 <coui></coui>	wth f
A; Molecule type: DNA	wth f
A; Accession: A44188	wth f
A; Reference number: A44188; MUID:86070181; PMID:2999974	wth f
A; Title: Tyrosine kinase receptor with extensive homology to EGF receptor shares chro	or
Science 230, 1132-1139, 1985	ine k
R;Coussens, L.; Yang-Feng, T.L.; Liao, Y.C.; Chen, E.; Gray, A.; McGrath, J.; Seeburg	ine k
A;Cross-references: GB:M11767; NID:g182163; PIDN:AAA35808.1; PID:g553282 .	1 1 1 1
A; Residues: 737-1031 <sem></sem>	• .:
A; Molecule type: DNA	
A; Accession: A25491	
A; Reference number: A25491; MUID: 86016729; PMID: 2995967	
A:Title: A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epic	•
Proc. Natl. Acad. Sci. U.S.A. 82, 6497-6501, 1985	
R.Semba K.: Kamata, N.: Tovoshima, K.: Yamamoto, T.	Pri.
A;Cross-references: GB:X03363; NID:q31197; PIDN:CAA27060.1; PID:q31198	
A; Residues: 1-1255 < YAM>	
A. Molecule type mRNA	•
A:Accession: A24571	
A;Title: Similarity of procein encoded by the numan creib-s-z gene to epidermai growth A:Reference number: A24571, MUID:R6118663: PMID:3003577	
Nature 319, 230-234, 1986	
R; Yamamoto, T.; Ikawa, S.; Akiyama, T.; Semba, K.; Nomura, N.; Miyajima, N.; Salto, T	
C; ACCESSION: A2491; A29491; A44188; B44188; 139309; 137022	

	329	330	Qy	
	NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 615	556 NA	В	
-	329	330	Ϋ́	
	NRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV 555	496 TA	Вb	
	329	330	Q	
	LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495	436 LH	Db	
	329	330	QΥ	
	ESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435	376 FLP	Db	
_	329	330	Qy	
	LHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375	316 PL	В	
	329	330	νO	
	NHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC 315	256 LHF	8	
	LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCYTACPYNYLSTDYGS 329	275 LH	δ	
	INCROSECTION	196 SP	B {	
		າ ຄ		
		_ ด		
	DIQEVQGYYLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASDG 154 	95 DI    76 DI	B 64	
	LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ 94 	35 LA 16 LP	DB Qy	
;	<pre>ch 64.3%; Score 2405.5; DB 1; Length 1255; l Similarity 41.1%; Pred. No. 9.7e-126; s09; Conservative 0; Mismatches 3; Indels 727; Gaps 1;</pre>	y Mato Local hes	Quer Best Matc	
te	ent) (by protein kinase C) #status ate (Tyr) (covalent) (by autophosp)	Bindin Active ,1221,	F; 686/ F; 753/ F; 1139	
tus	TP-binding motif ng site: carbohydrate (Asn) (covalent) #sta	734/Re 24,187	** ** *	
	status predicted	1255/D 983/Do		
•	in: Eus receptor extracellular domain repeat <ee1> in: EGF receptor extracellular domain repeat <ee2> in: transmembrane satatus predicted <tmm></tmm></ee2></ee1>	605/Do	F; 395-	
	signal sequence #status predicted <sig> uct: protein-tyrosine kinase erbB2 #status p n: extracellular #status predicted <ext></ext></sig>	/Domain: 255/Prod 53/Domai	F; 1-21, F; 22-1; F; 22-6;	
y ATP in; phospho	phorylation of a peptidyl tyrosine residue b actor receptor; protein kinase homology aon; duplication; glycoprotein; phosphoprote	Description: Superfamily: Keywords: AT	A; Desc C; Supe C; Keyw inase	
	st of introns is incomplete	tion:	A; Note	
	A; Map position: 17621.1-17621.1 A; Introns: 25/1; 75/3; 147/1; 883/3	positi	A; Map A; Intr	
	NBB2; NGL; NEU; HER-2	Genetics: Gene: GDB:	A; Gene	
in about 30	Comment: Amplification and overexpression of this erbB-related gene occurs in	s-refe	A; Cros	

B	616	FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVVLGVVFGILI 675	75
Qy	330	329	29 .
Db	676	KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735	. 35
Qy	330	37	329
, B	736	KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGIÇLTSTVQ 795	95 .
VΩ	330	329	29 .
Db	796	LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 855	55
Qy	330	329	29
Дb	856	PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVW3YGVTVWEL 915	15
Qy	330	329	29
Db	916	MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 975	75
Qy	330	329	29
Db	976	$FSRMARDPORFVVIQUEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP \ \ 1000000000000000000000000000000000$	1035
Qy	330	GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 387	87
Db	1036	APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 10	1095
οy	388	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG 447	47
В	1096	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG 11	1155
Οу	448	PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 507	07
В	1156	PLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEXLTPQGGAAPQPHPPPAFSP 12	1215
Qy	508	AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546	
Ъ	1216	AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254	

rotein-tyrosine kinase (EC 2.7.1.112) neu precursor - rat ;Species: Rattus norvegicus (Norway rat) ;Species: Rattus norvegicus (Norway rat) ;Date: 31.Dec-1988 #sequence\_revision 31-Dec-1988 #text\_change 11-Jun-1999 ;Accession: A24562; A61204 ;Bargmann, C.I.; Hung, M.C.; Weinberg, R.A. ;Bartymann, C.I.; Hung, M.C.; Weinberg, R.A.

A.Title: The new oncogene encodes an epidermal growth factor receptor-related protein N. Reference number: A24562; MUID:86118662; PMID:3945311
N. Accession: A24562
N. Molecule type: mRNA
N. Residues: 1-1260 <BARN
N. Cross references: EMBL:303362; NID:956745; PIDN:CAA27059.1; PID:956746
N. MASSIL, T.; MANN, A.M.; Macatee, T.L.; Garland, E.M.; Okamura, T.; Smith, R.A.; Cohe arcinogenesis 12, 1975-1978, 1991
N. Title: Direct DNA sequencing of the rat neu oncogene transmembrane domain reveals not thiazolyl] formamide or N-methyl-N-nitrosourea.
N. Reference number: A61204; MUID:92035293; PMID:1682063

;Status: preliminary ;Molecule type: DNA ;Molecule type: DNA ;Residues: 637-663,'V',665-702 <MAS> ;Note: authors translated the codon GCA for residue 25 as Val

Genetics:

A;Gene: neu
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Superfamily: epidermal growth factor receptor; protein; phosphoprotein; phos
C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phos
F;1-19/Domain: signal sequence #status predicted <SIG>
F;20-1260/Product: protein-tyrosine kinase neu #status predicted <MAT>

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F:658-680/Domain: transmembrane #status predicted <TMN>
F:723-988/Domain: protein kinase homology <KIN>
F:723-988/Domain: protein kinase homology <KIN>
F:731-739/Region: protein kinase ATP-binding motif
F:711-191,633,535,576,634/Binding site: carbohydrate (Asn) (covalent) #status predicted
F:691/Binding site: phosphate (Thr) (covalent) #status predicted
F:758/Active site: Lys #status predicted
                                                                                                                       Š
                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
S
                              В
                                                        δ
                                                                                         밁
                                                                                                                                                      밁
                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;882,1227,1253/Binding site: phosphate (Tyr) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 433
                                                             330
                                                                                            770
                                                                                                                          330
                                                                                                                                                        710
                                                                                                                                                                                      330
                                                                                                                                                                                                                     650
                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                 590
                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                              530
                                                                                                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                                                                                                                                            470
                                                                                                                                                                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185 TILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCA 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     110
 330
                             830 WCVQIAKGMSYLEDVRLVHRDLAARNVLVKSPNHVKITDFGLARLLDIDETEYHADGGKV 889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126 LFEDNYALAVLDNGDPLNNTTPVT-GASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQD 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGRYTFGASCVTACPYNYLSTDVGS-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNP 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQ 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GMEHLRGARAITSDNVQEFDGCKKIFGSLAFLPESFDGDPSSGIAPLRPEQLQVFETLEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MYLWKDVFRKNNQLAPVDIDTNRSRACPPCAPACKDNHCWGESPEDCQILTGTICTSGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LFEDKYALAVLDNRDPQDNVAASTPGRTPEGLRELQLRSLTEILKGGVLIRGNPQLCYQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RHLYQGCQVVQGNLELTYVPANASLSFLQDIQEVQGYMLIAHNQVKRVPLQRLRIVRGTQ 109
                                                                                         KEILDEAYVMAGVGSPYVSRLLGICLTSTVQLVTQLMPYGCLLDHVREHRGRLGSQDLLN
                                                                                                                                                      AMPNQAQMRILKETELRKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKAN 769
                                                                                                                                                                                                                   EQRASPVTFIIATVEGVLLFLILVVVVGILIKRRQKIRKYTMRRLLQETELVEPLTPSG 709
                                                                                                                                                                                                                                                                               AACAHYKDSSSCVARCPSGVKPDLSYMPIWKYPDEEGICQPCPINCTHSCVDLDERGCPA
                                                                                                                                                                                                                                                                                                                                           PTQCVNCSHFLRGQECVEECRVWKGLPREYVSDKRCLPCHPECQPQNSSETCFGSEADQC 589
                                                                                                                                                                                                                                                                                                                                                                                                         ALIHRNAHLCFVHTVPWDQLFRNPHQALLHSGNRPEEDLCVSSGLVCNSLCAHGHCWGPG 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ITGYLYISAWPDSLRDLSVFQNLRIIRGRILHDGAYSLTLQGLGIHSLGLRSLRELGSGL 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGRYTFGASCYTTCPYNYLSTEVGSCTLVCPPNNQEVTAEDGTQRCEKCSKPCARVCYGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RCKGRLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMHNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52.2%; Score 1950.5; DB 1; Length 1260; 34.1%; Pred. No. 1.6e-100; tive 24; Mismatches 72; Indels 741;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                          329
                                                                                         829
                                                                                                                       329
                                                                                                                                                                                                                                                                                 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65
 329
                                                                                                                                                                                     329
                                                                                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
```

	Db 890 PIKWMALESILRRRFTHQSDVWSYGVTVWELWTFGAKPYDGIPAREIPDLLEKGERLPQP 949	
<u>a</u>	Qy 330 329	
	Db 950 PICTIDVYMIMVKCWMIDSECRPRFRELVSEFSRMARDPQRFVVIQNEDLGPSSYMDSTF 1009	
	Qy 330	
	Db 1010 YRSLLEDDDMGDLVDAEEYLVPQQGFFSPDPTPGTGSTAHRRHRSSSTRSGGCELTLGLE 1069	
	357 PSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSET	
	PSEEGPPRSPLAPSEGAGSDVFDGDLAMGVTKGLQSLSPHDLSPLQRYSEDPTLPLPPET	
	Qy 417 DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDV 476	
	Db 1130 DGYVAPLACSPQPEYVNQSEVQPQPPLTPEGPLPPVRPAGATLERPKTLSPGKNGVVKDV 1189	
	Qy 477 FAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAE 536	
	Db 1190 FAFGGAVENPEYLVPREGTASPPHPSPAFSPAFDNLYYMDQNSSEQGPPPSNFEGTPTAE 1249 (	
	546	
•		
	DO 1630 NEBITOMONE 1633	
	RESULT 3 148161	
	p-185 precursor - golden hamster  C;Species: Mesocricetus auratus (golden hamster)  C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 18-Jun-1999 •	•
	R; Nakamura, T.; Ushijima, T.; Ishizaka, Y.; Nagao, M.; Arai, M.; Yamazaki, Y.; Ishika	Š
	A;Title: Cloning and activation of the Syrian hamster neu proto-oncogene. A;Fitle: Cloning and activation of the Syrian hamster neu proto-oncogene. A;Reference number: 148161; MUID:94193007; PMID:7908275	
	A;Accession: I48161 A;Status: preliminary; translated from GB/EMBL/DDBJ	
	A; PULLE LYPE: INKINA ARES A; Cross-references: GB:D16295; NID:g493236; PIDN:BAA03801.1; PID:g747595	
	C; Reywords: ATP	
	Query Match 51.8%; Score 1935; DB 2; Length 1254;	
	423; Conservative	
	Qy 25 WLDRSVLAKELARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYL 84	
	Db 6 WCGWGLLLALLSPGASGTQVCTGTDMKLRLPASPETHLDIVRHLYQGCQVYQGNI,ELTYL 65	
	Qy 85 PTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNN 144	
	Db 66 PANATLSFLQDIQEVQGYMLIAHSQVRHVPLQRLRIVRGTQLFEDKYALAVLDNRDPLDN 125	
	Qy 145 TTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILMKDIFHKNQLALTLID 204	
	Db 126 VTTATGRTPEGLRELQLRSLTEILKGGVLIRGNPQLCYQDTVLWKDVFRKNNQLAPVDID 185	
	QY 205 TNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCT 264	
	Db 186 TNRSRACPPCAPACKDNHCWGASPEDCQTLTGTIAPRAVPAARARLPTDCCHEQCAAGCT 245	
	GPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLS	
	Db 246 GPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTTCPYNYLS 305	

```
epidermal growth factor receptor precursor - chicken N;Contains: protein-tyrosine kinase (EC 2.7.1.112) erbB C;Species: Gallus gallus (chicken) C;Date: 2B.Feb-1986 #sequence_revision 05-May-1995 #text_change C;Accession: A27720; A00643
                                                                    RESULT
TVCHLV
                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                       밁
                                                                                                                                            Š
                                                                                                                                                                         밁
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                               믕
                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                       1206
                                                                                                                                                                                                                              1086
                                                                                                                                                                                                                                                                               1026
                                                                                                                                                                                                                                                     378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    546
                                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                                 966
                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                     906
                                                                                                                                                                                                                                                                                                                                                                                                                                       846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TDVGS---
                                                                                                                     RPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAP
                                                                                                                                                                                                                                                                                                                                                                                  WSYGVTVWELMTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TEVGSCTLVCPLNNQEVTAEDGTQRCEKCSKSCARVCYGLGMEHLRGARAITSANIQEFA
                                                                                                                                                                                                                            FEGELGMGATKGPQSISPRDLSPLQRYSEDPTLPLPTETDGYVAPLACSPQPEYVNQPEV
                                                                                                                                                                                                                                         FDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDV
                                                                                                                                                                                                                                                                                                                              RPRFRELVSEFSRMARDPQRFVVIQNEDLGPSSPLDSTFYRSLLEDDDMGDLVDAEEYLV
                                                                                                                                                                                                                                                                                                                                                                                                                                      LAARNVLVKSPNHVKITDFGLARLLDIDETEYHADGGKVPIKWIALESILRRRFTHQSDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VIGVVVGILIKRRRQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PDLSYMPIWKYPDEEGMCQPCPINCTHSCVDLDERGCPAEQRASPATSIIATVVGILLFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VWKGLPREYVNGKHCLPCHPECQPQNSTETCTGSEADQCTACPHYKDSPFCVARCPSGVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FRNPHQALLHSGNPSEEECGLKDFACYPLCAHGHCWGPGPTQCVNCSHFLRGQECVKECR
                                                                                                                                                                       RPQPPLTPEGPLPPVRPAGATLERPKTLSPGKNGVVKDVFTFGGAVENPEYLVPRGGSAS
                                                                                                                                                                                                                                                                               PQQGFFFPDPAPGAGSTAHRRHRSSSTRSGGGELTLGMEPSGEEPPRSPLAPSEGAGSDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LGICLTSTVQLVTQLMPYGCLLDHVREHRGRLGSQDLLNWCVQIAKGMSYLEDVRLVHRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGLGSPYVSRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QNLRVIRGRVLHDGAYSLALQGLGIRWLGLRSLRELGSGLVLIHRNTHLCFVHTVPWDQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCKKIFGSLAFLPESFDGNPSSGIAPLTPEQLQVFETLEEITGYLYISAWPDSLHDLSVF
                                                                                                                                                                                                                                                                                           -GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDV
                                                                                                                                               546
              04-Feb-2000
                                                                                                                                                                                                                           1145
                                                                                                                                                                                                                                                                             1085
                                                                                                                                                                                                 497
                                                                                                                                                                                                                                                   437
                                                                                                                                                                                                                                                                                                                                                                                    965
                                                                                                                                                                                                                                                                                                                                                                                                              329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           365
```

ð

RESULT A42032

epidermal growth factor receptor - C; Species: Gallus gallus (chicken)

chicken

```
F;31-1223/Product: epidermal growth factor receptor #status predicted <MAT>
F;31-654/Domain: extracellular #status predicted <EXT>
F;31-654/Domain: EGF receptor extracellular domain repeat <EE1>
F;97-610/Domain: EGF receptor extracellular domain repeat <EE2>
F;97-610/Domain: transmembrane #status predicted <TMM>
F;655-677/Domain: transmembrane #status predicted <TMM>
F;655-677/Domain: intracellular #status predicted <INT>
F;712-31/Domain: protein kinase homology <KIN>
F;727-735/Region: protein kinase homology <KIN>
F;727-735/Region: protein kinase ATP-binding motif
F;136,202,280,361,370,422,575,580,615,635/Binding site: carbohydrate (Thr) (covalent)
F;192,650/Binding site: carbohydrate (Ser) (covalent) #status predicted
F;687/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F;754/Active site: Lys #status predicted
F;754/Active site: Lys #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R:Nilsen, T.W.; Maroney, P.A.; Goodwin, R.G.; Rottman, F.M.; Cell 41, 719-726, 1985
A;Title: C-erbB activation in ALV-induced erythroblastosis: A;Reference number: A00643; MUID:85228222; PMID:2988784
A;Accession: A00643
                                        Š
                                                                                        밁
                                                                                                                               δõ
                                                                                                                                                                               Вþ
                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pecific protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Superfamily: epidermal growth factor receptor; protein ki C;Keywords: alternative splicing; ATP; autophosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:M10066
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-1223 <LAX>
A; Cross-references: GB: M20386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Title: Chicken epidermal growth factor (EGF) receptor: A;Reference number: A27720; MUID:88261272; PMID:3260329 A;Accession: A27720
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 585-1223 <NIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Lax, I.; Johnson, A.; Howk, R.; Sap, J.; Bellot, F.; Winkler, M.; Ullrich, Mol. Cell Biol. 8, 1970-1978, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Gene: erbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                             370
                                                                                           294
                                                                                                                                        310
                                                                                                                                                                                    234
                                                                                                                                                                                                                                 250
                                                                                                                                                                                                                                                                                                                                                                        124
                                                                                                                                                                                                                                                                                                                                                                                                                   132
                                                                                                                                                                                                                                                                                                                          192
                                                                                                                                                                                                                                                                                                                                                                                                                                                         28 RSVLAKELARGAA-------STQVCTGTDMKLRLPASPETHLDMLRHLYQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                           SEGAGSDVFDGDLGMGAAKGLQSL
                                                                                                                                                                                      VPSDCCHNQCAAGCTGPRESDCLACRKFRDDATCKDTCPPLVLYNPTTYQMDVNPEGKYS
                                                                                                                                                                                                            LPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYT 309
                                                                                                                                                                                                                                                                                                       FHKNNQLALTLID-TNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCA-RCKGP
: : ||::| : || | | | | | | ::||:|| |: || |: || |:||
                                                                                                                                                                                                                                                                                                                                                                                                ALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RSPLSASGPRGAAVLVLLLLGVALCSAVEEKKVCQGTNNKLTQLGHVEDHFTSLQRMYNN
CDGLCSKVCNG-IGIGELKGILSI
                                                                                           FGATCVRECPHNYVVTDHGSCV-----
                                                                                                                                      FGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAP 369
                                                                                                                                                                                                                                                                               IDTSRK-PLTVLDFASNLSSCPKCHPNCTEDHCWGAGEQNCQTLTKVICAQQCSGRCRGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57; Mismatches 119;
                                                                                                                                                                                                                                                                                                                                                                   -GLRELPMKRLSEILNGGVKISNNPKLCNMDTVLWNDI 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 755.5;
                                             393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
.
                                                                                           RSCNTDT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.5e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F.M.; Crittenden, L.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                           YEVEENGVRK-CKK 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    kinase homology
on; glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   novel RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cloning,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                processing
                                                                                                                                                                                                                                                                                                                                                                                                                   191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71
                                                                                                                                                                                    293
                                                                                                                                                                                                                                                                               233
                                                                                                                                                                                                                                                                                                                          249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Α...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Venn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
```

```
C;Date: 31-Dec
C;Accession: A
R;Flickinger,
                 A; Residues: 1-1210 <ULL>
A; Residues: 1-1210 <ULL>
A; Residues: 1-1210 <ULL>
A; Cross-references: EMBL:X00588; NID:g31113; PIDN:CAA25240.1; PID:g757924
A; Kote: the authors translated the codon AAG for residue 540 às Asn
A; Kote: the authors translated the codon AAG for residue 540 às Asn
R:Ishi1, S; Xu, V.; Stratton, R.H.; Roc, B.A.; Merlino, G.T.; Pastan, I.

Proc. Natl. Acad. Sci. U.S.A. 82, 4920-4924, 1985
A; Title: Characterization and sequence of the promoter region of the human epidermal
A; Title: Characterization and sequence of the promoter region of the human epidermal
                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Experimental source: liver A; Experimental source: tracted f; Superfamily: epidermal growth factuc; Keywords: ATP; growth factuc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mol. Cell. Biol. 12, 883-893, 1992
A;Title: An alternatively processed mRNA from the avian
A;Reference number: A42032; MUID:92123214; PMID:1732751
A;Reference number: A25772; MUID:85270438; A;Accession: A25772
A;Status: translation not shown
                                                                                                                                                                                     A;Title: Human epidermal
A;Reference number: A006
A;Accession: A00641
                                                                                                                                                                                                                                                                                                                                                           epidermal growth factor receptor precursor - N; Contains: protein-tyrosine kinase (EC 2.7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Cross-references: GB: M77637; NID:g211737;
                                                                                                                                                   A; Molecule t
A; Residues:
                                                                                                                                                                                                                                                   Nature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Residues: 1-527 <FLI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Note: sequence extracted from NCBI backbone (NCBIN:76892, NCBIP:76893)
Superfamily: epidermal growth factor receptor; protein kinase homology
Neywords: ATP; growth factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Date: 31-Dec-1993; Accession: A42032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                     Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   139
                                                                                                                                                                                                                                                 309, 418-425, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-Dec-1993 #sequence_revision 31-Dec-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALTLID-TNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VCNG-IGIGELKGILSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VFDGDLGMGAAKGLQSL 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YH-MNKTQ-----GLRELPMKRLSEILNGGVKISNNPKLCNMDTVLWNDIIDTSRK- 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LEITYVEHNRDLTFLKTIQEVAGYVLIALNMVDVIPLENLQIIRGNVLYDNSFALAVLSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LVLLLLLGRVALCS----AVEEKKVCQGTNNKLTQLGHVEDHFTSLQRMYNNCEVVLSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NQCAAGCTGPRESDCLACRKFRDDATCKDTCPPLVLYNPTTYQMDVNPEGKYSFGATCVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLTVLDFASNLSSCPKCHPNCTEDHCWGAGEQNCQTLTKVICAQQCSGRCRGKVPSDCCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T.W.; Maihle,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                           ermal growth factor receptor cDNA sequence A00641; MUID:84219729; PMID:6328312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 754.5;
Pred. No. 1.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kung,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                             30r - human
2.7.1.112) erbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.1e-34;
ches 126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIDN: AAA48759.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---YEVEENGVRK-CKKCDGLCSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 c-erbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PID:g211738
                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-Jun-1999
                                                                                                                                                                                                                           aberrant expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 encodes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                       A60143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 soluble
                                                                                                                                                                                                                                                                                   Lee,
                                                     gro
                                                       A; Gene: GDB: EGFR
```

```
A;Residues: 1-29 <ISH>
A;Residues: 1-29 <ISH>
A;Cross-references: GB:M11234; NID:g181981; PIDN:AAA52370.1; PID:g553272
R;Haley, J.; Whittle, N.; Bennett, P.; Kinchington, D.; Ullrich, A.; Watt
```

R;Haley, J.; Whittle, N.; Bennett, P.; Kinchington, D.; Ullrich, A.; Waterfield, M. Oncogene Res. 1, 375-396, 1987
A;Tille: The human EGF receptor gene: structure of the 110 kb locus and identificatio A;Reference number: S30024; MUID:88217333; PMID:3329716

A; Accession: S30024 A; Molecule type: DNA A; Residues: 1-29 <HA2>

A;Cross-references: EMBL:X06370; NID:g31118; PIDN:CAA29668.1;

R; Haley, J.D.; J. Biol. Chem. Waterfield, M.D. 266, 1746-1753, 1991 premature transcript termi PID:g31119

A; Molecule type: DNA A; Residues: 1-29 <HAL> A;Title: Contributory effects of de Novo transcription and A;Reference number: A38672; MUID:91107677; PMID:1988448 A;Accession: A38672

A;Cross-references: GB:M38425; NID:g181977; PIDN:AAA63171.1; PID:g553271
A;Experimental source: carcinoma cell line A431-7
R;Xu, Y;; Ishii, S.; Clark, A.J.L.; Sullivan, M.; Wilson, R.K.; Ma, D.P.; Roe, B.A.;
Nature 309, 806-810, 1984
A;Title: Human epidermal growth factor receptor cDNA is homologous to a variety of RN
A;Reference number: A00642; MUID:84245835; PMID:6330563
A;Accession: A00642
A;Molecula type: mRNA
A;Residues: 'RCAWRRA',150-187, 'KSVIQAV',195,'M',197,'A',199-222,'S',224-304,'RA',307A;Residues: 'RCAWRRA',150-187, 'KSVIQAV',195,'M',197,'A',199-2

A;Title: Expression cloning of human EGF receptor complementary DNA: A;Reference number: A43615; MUID:84196372; PMID:6326261 A;Accession: A43615 gene amplificati

A; Molecule type: mRNA A; Residues: 713-964 <LIN>

A;Experimental source: epidermoid carcinoma cell line A431 R;Simmen, F.A.; Gope, M.L.; Schulz, T.Z.; Wright, D.A.; Car Biochem. Biophys. Res. Commun. 124, 125-132, 1984 A;Reference number: A23062; MUID:85046483; PMID:6093780 A;Accession: A23062 Carpenter, G : ; O'Malley,

œ

Σ

A; Molecule type: mRNA A; Residues: 1028-1210 <SIM> R; Weber, W; Gill, G.N.; Speiss, Science 224, 294-297, 1984

A; Reference number: A05281; MUID:84172183;

PMID: 6324343

A; Accession: A05281 A; Molecule type: protein A; Residues: 25-30,'S',32

-30,'S',32-51;454-467 <WEB> S Staros, J.V.

R; Russo, M.W.; J. Biol. Chem.

J. Biol. Chem. 260, 5205-5208, 1985 A; Title: Identification of residues in the A; Reference number: A60143; MUID:85182650; nucleotide binding PMID:2985580 site of. the

epidermal

A; Reference number: A60143; MUID:83182650; PMID:2985580

A; Accession: A60143

A; Molecule type: protein
A; Residues: 740-744, 'X', 746-747 <RUS>
R; Mroczkowski, B.; Mosig, G.; Cohen, S.

Nature 309, 270-731, 1984
A; Title: ATP-stimulated interaction between epidermal growth factor receptor and A; Title: ATP-stimulated MID:84191554; PMID:8325948
A; Reference number: A38023; MUID:84191554; PMID:8325948
A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DN A; Note: the EGF receptor (and other tyrosine kinases) can nick

from

Cell 59, 33-43, 1989
A;Title: Functional independence of the epidermal growth A;Reference number: A33331; MUID:90003233; PMID:2790960 factor receptor

internalization signa.

ç

internalization

o f

the

EGF-recepto

DNA Der,

റ

supe

C;Comment: Binding
C;Genetics: of EGF to the receptor leads

annotation;

A;Cross-references: GDB:120610; OMIM:131550 A;Map position: 7p12.3-7p12.1 C;Superfamily: epidermal growth factor receptor; pr C;Keywords: ATP; autophosphorylation; duplication; protein kinuse homology
n; glycoprotein; phosphoprotein; phos

```
F:1-24/Domain: signal sequence #status predicted <SIG>
F:25-1210/Product: EGF receptor #status predicted <MAT>
F:25-645/Domain: extracellular #status predicted <EXT>
F:75-300/Domain: EGF receptor extracellular domain repeat <EE1>
F:75-300/Domain: EGF receptor extracellular domain repeat <EE1>
F:390-600/Domain: EGF receptor extracellular domain repeat <EE2:
F:390-600/Domain: transmembrane #status predicted <TMM>
F:669-1210/Domain: intracellular #status predicted <INT>
Ş
                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                          R;Plowman, G.D.; Culouscou, J.M.; Whitney, G.S.; Green, J.M.; Carlton, Proc. Natl. Acad. Sci. U.S.A. 90, 1746-1750, 1993
A;Title: Ligand-specific activation of HER4/pl80erbB4, a fourth member A;Reference number: A47253; MUID:93189574; PMID:8383326
A;Accession: A47253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          epidermal growth factor receptor, HER4 - human C;Species: Homo sapiens (man) C;Date: 22-Sep-193 #sequence_revision 18-Nov-1994 #text_change 18-Jun-1999 C;Accession: A47253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
A47253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                S
                                                                                                                                                                                                                                                                   A;Cross-references: GB:LO7868; NID:g337359; PIDN:AAB59446.1; A;Note: sequence extracted from NCBI backbone (NCBIP:126842) C;Superfamily: epidermal growth factor receptor; protein kina C;Keywords: ATP; growth factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F;710-975/Domain: protein kinase homology <KIN>
F;718-726/Region: protein kinase ATP-binding motif
F;999-1046/Region: coated-pit mediated internalization signal
                                                                                                                                                                                                                            F;724-732/Region:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F;1047-1
                                                                                                                                                                                                                                                                                                                                                              A; Residues: 1-1308 < PLO>
                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary; not compared with conceptual translation
                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               199-1040/Region: inhibitory
1047-1210/Region: inhibitory
128,175,352,413,444,528,603/Binding site: carbohydrate (Asn)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 156
    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36 ARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQD
                                                7
TYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SRALEEKKVCQGTSNKLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRNYDLSFLKT
                                             LWVWVSLLVAAGTV-QPSDSQSVCAGTENKLSSLSDLEQQYRALRKYYENCEVVMGNLEI 65
                                                                                       LFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RKFRDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PMCKGSRCWGESSEDCQSLTRTVCAGGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGM 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PSCPNGSCWGAGEENCQKLTKIICAQQCSGRCRGKSPSDCCHNQCAAGCTGPRESDCLVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LKELPMRNLQEILHGAVRFSNNPALCNVESIQWRDIVSSDFLSNMSMDFQNHLGSCQKCD 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IQEVAGYVLIALNTVERIPLENLQIIRGNMYYENSYALAVLSNYD------ANKTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                         protein
protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SCVRACGAD----SYEMEEDGVRK-CKKCEGPCRKVCNG-IGIGEFKDSLSI 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                       19.3%;
                                                                                                                                                                                                                         kinase homology <KIN>
kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19.3%; Score 721;
41.5%; Pred. No. 7
                                                                                                                                       42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51;
                                                                                                                                  Score 721; DB 2;
Pred. No. 2.2e-32;
2; Mismatches 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1; Length 1210;
                                                                                                                                     107;
                                                                                                                                                                                                                                                                                          protein kinase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      129;
                                                                                                                                                                            Length 1308;
                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                     PID:g337360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (covalent) #status
                                                                                                                                     12;
                                                                                       81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G.W.; Foy, L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95
                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           predi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ,Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
```

```
epidermal growth factor receptor precursor - mouse
epidermal growth factor receptor precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 18-Jun-1999,
C;Accession: A5318; A43818; S24942; A28941; S45325; I49643
C;Accession: A5318; A43818; S24942; A28941; S45325; I49643
                                                                                 A;Cross-references: EMBL:X78987; NID:g488830; PIDN:CAA5: R;Paria, B.C.; Das, S.K.; Andrews, G.K.; Dey, S.K. R;Paria, B.C.; Das, S.K.; Andrews, G.K.; Dey, S.K. Proc. Natl. Acad. Sci. U.S.A. 90, 55-59, 1993
A;Title: Expression of the epidermal growth factor reception of the pidermal grow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Hibbs, M.L.; Dunn, A.R.; Alexander, W.S. submitted to the EMBL Data Library, April 1994 A;Description: The complete cDNA sequence of the A;Reference number: $45325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:Z12608
R;Heisermann, G.J.; G111, G.N.
J. Biol. Chem. 263, 13152-13158, 1988
J. Biol. Chem. 263, 13152-13158, 1988
A;Title: Epidermal growth factor receptor threonine and A;Title: Epidermal growth factor receptor threonine and A;Reference number: A28941; MUID:88330814; PMID:3138233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;AvIvi, A.; Lax, I.; Ullrich, A.; Schlessinger, J.; Givoncogene 6, 673-676, 1991
A;Title: Comparison of EGF receptor sequences as a guide A;Reference number: A43818; MUID:91232866; PMID:2030916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title: The mouse waved-2 phenotype results from a point mutation A; Reference number: A53183; MUID:94170986; PMID:8125255 A; Accession: A53183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R; Eisinger, D.P.; Serrero, G. submitted to the EMBL Data Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Luetteke, N.C.; Phillips, H.K.; Qiu, T.H.; Genes Dev. 8, 399-413, 1994
A; Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-971, 'K', 973-1210 <VER>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 689-694,'X',696-704,'L',706-707;989-992,'XX',995-996,'X',998-1000;1002-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 969-971, 'K', 973-1115, 'D'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: A; Accession: S24942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type:
A; Residues: 1-12]
                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1-714 <AVI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: S45325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Accession: A28941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:X59698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Accession: A43818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:U03425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          296 NFV 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              261 AGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TSIEHNRDLSFLRSVREVTGYVLVALNQFRYLPLENLRIIRGTKLYEDRYALAIFLNYRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCSGPKDTDCFACMNFNDSGACVTQCPQTFVYNPTTFQLEHNFNAKYTYGAFCVKKCPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DGNF-----GLQELGLKNLTEILNGGVYVDQNKFLCYADTIHWQDIVRNPWPSNLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1-1210 <LUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S24942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A.; Schlessinger, J.; Givol,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   June 1992
                                                                                                                                               factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
                                                                                                                                                                                                                                                PIDN: CAA55587.1;
S.K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mouse Epidermal Growth Factor Recept
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    serine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç
                                                                                                                                               generis regulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     study the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D.; Morse,
                                                                                                                                                                                                                                                                                                   PID: 948883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in the EGF recepto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H.S.; Jenkins,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ligand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    phosphorylate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                binding
```

'n mous

```
A;Cross-references: GB:L06864; NID:glyJuul; Flum.Fran.Juu., A;Gene: EGFR
C;Gene: EGFR
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; growth factor receptor; kinase-related transforming protein; phosphoprd
F;1-24/Domain: signal sequence #status predicted <SIG>
F;648-670/Domain: transmembrane #status predicted <TMM>
F;712-977/Domain: protein kinase homology <KIN>
F;720-728/Region: protein kinase ATP-binding motif
F;680,659/Binding site: phosphate (Thr) (covalent) #status experimental
F;697,1070,1071/Binding site: phosphate (Ser) (covalent) #status experimental
F;993/Binding site: (or 1030 or 1032) phosphate (Ser) (covalent) #status experimental
F;1028/Binding site: phosphate (Thr) (covalent) #status experimental
F;107/Binding site: phosphate (Thr) (covalent) #status experimental
                                                                                                                                                                                                                                                        A;Cross-references: GB:M37394
A;Cross-references: GB:M37394
C;Superfamily: epidermal growth factor receptor; protein kinase
C;Keywords: alternative splicing; ATP; growth factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  epidermal growth factor receptor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 25-Jan-1991 #sequence_revision 25-Jan-1991 #text_change 10-Oct-1997
C;Accession: A36325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                  õ
                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                              R;Petch, L.A.; Harris, J.; Raymond, V.W.; E Mol. Cell. Biol. 10, 2973-2982, 1990
A;Title: A truncated, secreted form of the A;Reference number: A36325; MUID:90258888;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
  밁
                                                                                      밁
                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-644 < PET>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: A36325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
  74
                                             88
                                                                                        14
                                                                                                                 20
                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ARGAA--STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGLRELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDI----FHKNNQLALTLIDTNRSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGALEEKKVCQGTSNRLTQLGTFEDHFLSLQRMYNNCEVVLGNLEITYVQRNYDLSEL
                                           ASLSFLODIQEVOGYVLIAHNOVROVPLORLRIVRGTQLFEDNYALAVLDNGDPLNNTTP
                                                                                      LLAALCAAGGALEEKKVCQGTSNRLTQLGTFEDHFLSLQRMFNNCEVVLGNLEITYVQRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SDCLVCQKFQDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTDHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SDCLACLHENHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGLRELPMRNLQEILIGAVRFSNNPILCNMDTIQWRDIVQNVFMSNMSMDL----QSHPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KTIQEVAGYVLIALNTVERIPLENLQIIRGNALYENTYALAILSN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASP 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SCPKCDPSCPNGSCWGGGEENCQKLTKIICAQQCSHRCRGRSPSDCCHNQCAAGCTGPRE
  YDLSFLKTIQEVAGYVLIALNTVERIPLENLQIIRGNALYENTYALAVLSN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                 Similarity
                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J.; Raymond, V.W.; Blasband, A.;
                                                                                                                                                                                               19.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19.2%; Score 717.5; DB 2;
46.8%; Pred. No. 3.1e-32;
tive 39; Mismatches 100;
                                                                                                                                                                            60;
                                                                                                                                                                                               Score 714.5; DB 2; Pred. No. 2.3e-32;
                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                     epidermal growth PMID:2342466
                                                                                                                                                                            158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1210;
                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lee, D.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                       factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---YGTNR
                                                                                                                                                                          67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Earp, H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93
                                                                                                                                                                                                                                                                                                                                                                                                                                         is
                                                                                                                                                                      13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5;
                                                                                                                                                                                                                                                                                                                                                                                                                                           encoded
                                                                                                                                                                                                                                                                                                                     C;Superfamily: unassigned Ser/Thr or Tyr-spec
C;Keywords: ATP; phosphotransferase
E;707-972/Domain: protein kinase homology <KI
F;715-723/Region: protein kinase ATP-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
A36223
A36223
Kinase-related transforming protein (erbB3) (EC 2.7.1.-) precurs
C;Species: Homo sapiens (man)
C;Date: 04-Oct-1991 *sequence_revision 13-Jan-1993 *text_change
C;Accession: A36223; I59164
R;Kraus; M.H.; Issing, W.; Miki, T.; Popescu, N.C.; Aaronson. S.
                  Q
                                                               망
                                                                                                    QY
                                                                                                                                                   B
                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                A;Gene: GDB:ERBB3; HER3
A;Cross-references: GDB:119880; OMIM:190151
A;Map position: 12q13-12q13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: mRNA
A;Residues: 1-559,'G',561-957,'F',959-1063,'G',1065-1342 <
A;Cross-references: GB:M34309; NID:g183990; PIDN:AAA35979.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Plowman, G.D.; Whitney, G.S.; Neubauer, M.G.; Green, J.M.; McDonald, Proc. Natl. Acad. Sci. U.S.A. 87, 4905-4999, 1990
A;Title: Molecular cloning and expression of another epidermal growth A;Reference number: IS9164; MUID:90311312; PMID:2164210
A;Accession: IS9164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1-1342 <KRA>
A; Cross-references: GB:M29366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R:Kraus, M.H.; Issing, W.; Miki, T.; Popescu, N.C.; Aaronson, Proc. Natl. Acad. Sci. U.S.A. 86, 9193-9197, 1989
A;Title: Isolation and characterization of ErBB3, a third memi A;Reference number: A36223; MUID:90083234; PMID:2687875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gg.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: A36223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                            Superfamily: unassigned Ser/Thr or Tyr-specific protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125 -YGTNKTGLRELPMRNLQEILIGAVRFSNNPILCNMETIQWRDIV-QDVFLSNMSMDVQR
                      133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    148 VTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNR
                                                                  57
                                                                                                          73
                                                                                                                                                      10 LGLLF
                                                                                                                                                                                               16 LGFLFLLFFWLDRSVLAKELARGAA---STQVCTGTDMKLRLPASPETHLDMLRHLYQGC
                                                                                                                                                                                                                                                              Local
                                                                                                    QVVQGNLELTYLPTNASLSELQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYA 132
                      LAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ε---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EFKDTLSI---NATNIKHFKYCTAI----SGDLHILPVA-----FKGDSFTRTPPLDPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PHG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EVVMGNLEIVLTGHNADLSFLQWIREVTGYVLVAMNEFSTLPLPNLRVVRGTQVYDGKFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGPLPAARPAGATLERAKTLSPGKNGVVKDVFAF 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRESDCLVCHRFRDEATCKDTCPPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLST
                                                                                                                                                                                                                                            139;
                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                            18.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -SCVRACGPDYY----EVEEDGVSKCKKCDGPCRKVCNG-IGIG
                                                                                                                                                      -SLARGSEVGNSQAVCPGTLNGLSVTGDAENQYQTLYKLYERC
                                                                                                                                                                                                                                          45;
                                                                                                                                                                                                                                                              Pred.
                                                                                                                                                                                                                                                                 Score 697;
Pred. No. 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from
                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VKEITGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GB/EMBL/DDBJ
motif
                                                                                                                                                                                                                                                            DB 2;
1.8e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.7.1.-) precursor -
                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J.M.; McDonald,
                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                kinases;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          member
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PID: g306841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S.A.
                                                                                                                                                                                                                                            30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-Nov-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
```

the

ERBB/epiderma

445 343 302 325 242 265 182

385

٧.L.;

protein kinase

hom

Gaps

7;

```
A; cross-reterences: EMBL:X03021; NID:g31858; PIDN:CAA26822.1; R; Kaushansky, K.; O'Hara, P.J.; Berkner, K.; Segal, G.M.; Haç Proc. Natl. Acad. Sci. U.S.A. 83, 3101-3105, 1986 A; Title: Genomic cloning, characterization, and multilineage A; Reference number: I59065; MUID:86205844; PMID:3486413 A; Stratio.
A; Molecule type:
A; Residues: 18-21
C; Genetics:
                                                                                                 A;Cross-references: GB:M10663; NID:g181145; PIDN:AAA52121.1; PID:g181146 A;Note: parts of this sequence, including the amino end of the mature prof R;Wen, D.Y.; Huang, B.R.; Cai, L.W.; J.Y. Acta Blochim. Blophys. Sin. 25, 651-655, 1993 A;Title: Amplification of human granulocyte-macrophage colony-stimulating A;Reference number: JC1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:M11734; NID:g181149; PIDN:AAA52122.1; PID:g181150 R;Lee, F.; Yokota, T.; Otsuka, T.; Gemmell, L.; Larson, N.; Luh, J.; Arai, K.; Re Proc. Natl. Acad. Sci. U.S.A. 82, 4360-4364, 1985 A;Title: Isolation of cDNA for a human granulocyte-macrophage colony-stimulating A;Reference number: A01853; MUID:85242684; PMID:3925454 A;Accession: A01853; MUID:85242684; PMID:3925454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: Homo sapiens (man)
C;Date: 04-Dec-1986 #text_change
C;Accession: C24636; I59065; A25169; A01853; A44175; JC1090
R;Miyatake, S.; Otsuka, T.; Yokota, T.; Lee, F.; Aral, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Residues: 1-144 <RES>
A;Cross-references: GB.M13207; NID:g181147; PIDN:AAA98768.1; PID:g181148
R;Cross-references: GB.M13207; NID:g181147; PIDN:AAA98768.1; PID:g181148
R;Cantrell, M.A.; Anderson, D.; Cerretti, D.P.; Price, V.; McKereghan, K.; Tushinski, R
Proc. Natl. Acad. Sci. U.S.A. 82, 6250-6254, 1985
R;Title: Cloning, Sequence, and expression of a human granulocyte/macrophage colony-stir A;Reference number: A25169; MUID:85298329; PMID:3898082
A;Accession: A25169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBO J. 4, 2561-2568, 1985
A; Title: Structure of the chromosomal gene A; Reference number: A91015; MUID:86030234; A; Accession: C24636
                                                                                                                                                                                                                                                                                                               A; Reference number: A44175; A; Accession: A44175
                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: mrNA
A;Residues: 1-144 <LEE>
A;Cross-references: GB:M11220; NID:g183363; PIDN:AAA52578.1; PID:g183364
A;Cross-references: GB:M11220; NID:g183363; WIN:AAA52578.1; PID:g183364
R;Wong, G.G.; Witek, J.S.; Temple, P.A.; Wilkens, K.M.; Leary, A.C.; Lux
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   granulocyte-macrophage colony-stimulating factor precursor [validated] -
N;Alternate names: colony-stimulating factor 2; GM-CSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                              A; Residues: 1-116, 'T', 118-144 <WON>
                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                     A; Title: Human GM-CSF: molecular cloning of the complementary DNA and A; Reference number: A44175; MUID:85218749; PMID:3923623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-144 <CAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Residues: 1-144 <R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-144 <MIY>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                           Science 228,
                                                                                                                                                                                                                                                                                                                                                                                                                      A.; Clark,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: translated from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NQCCHDECAGGCSGPQDTDCFACRHFNDSGACVPRCPQPLVYNKLTFQLEPNPHTKYQYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ASCVTACPYNYL 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCAGGC-ARCKGPLP
                                                                                                                                                                                                                                                                                                                                                                                                                      s.c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RDRD---AEIVVKDNGRSCPPCHEVCKG-RCWGPGSEDCQTLTKTICAPQCNGHCFGPNP
                     ype: protein
18-21,'C',23-96,'L',98-144 <WEN>
                                                                                                                                                                                                                                                                                                                                                                                           810-815, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NSSHALRQLRLTQLTEILSGGVYIEKNDKLCHMDTIDWRDIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for granulocyte-macrophage colony
PMID: 3876930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIDN:CAA26822.1; PID:g31859
Segal, G.M.; Hagen, F.S.; A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             growth-promoting
                                                                                                                                                                                                                                                                                                                                                                                                                                         Luxenberg,
                                                                                                                                                                                                     protein,
                                                                                                                                                                                                                                                                                                                                                                purification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Adamson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        167
                                                                                                                            factor cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           stimulatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             activity
                                                                                                                                                                                                        were
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J.₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                            D.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    factor
                                                                                                                                                                                                                                                                                                                                                                   ¢
                                     Ş
                                                                                                 Ъ
                                                                                                                                          Ş
                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Map position: SA; Introns: 53/3; C; Function:
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Keywords: ATP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           668 DCWEPVQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ErbB3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          127;
```

```
A:Molecule type: mRNA
A:Molecule type: mRNA
A:Molecule type: mRNA
A:Residues: 1-1339 < HEL>
A:Residues: GB:U29339; NID:g915389; PID:g915390
A:Experimental source: liver
A:Experimental source: liver
A:Note: The authors translated the codon AAC for residue 369 as Thr and GTT for residue.
A:Note: The authors translated the codon AAC for residue 369 as Thr and GTT for residue.
A:Note: The authors translated the codon AAC for residue 369 as Thr and GTT for residue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F:640-659/Domain: transmembrane #status predicted <TMM>
F:705-701/Domain: protein kinase homology <KIN>
F:713-721/Region: protein kinase ATP-binding motif
F:939,1051,1156,1194,1196,1219,1257,1259,1273,1286,1325/Binding site:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Hellyer, N.J.; Kim, H.H.; Greaves, C.H.; Sierke, S.L.; Kol
Gene 165, 279-284, 1995
A;Title: Cloning of the rat ErbB3 cDNA and characterization
A;Reference number: JC4387; MUID:96096535; PMID:8522190
A;Accession: JC4387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Description: stimulates the differentiation and proliferation of hematopoletic C;Superfamily: granulocyte-macrophage colony-stimulating factor C;Keywords: cytokine; glycoprotein; growth factor; macrophage; monomer; T-cell F;1-17/Domain: signal sequence #status predicted <SIG>
F;18-144/Product: granulocyte-macrophage colony-stimulating factor #status experi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Gene: GDB:CSF2
A;Cross-references: GDB:119812; OMIM:138960
Aman nosition: 5q23.2-5q31.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Keywords: ATP; growth factor receptor; liver; phosphoprotein; tran: F;1-19/Domain: signal sequence #status predicted <SIG> F;20-1339/Product: epidermal growth factor homolog #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            epidermal growth factor receptor homolog precursor N;Alternate names: ErbB3 protein; HER3 protein C;Species: Rattus norvegicus (Norway rat) C;Date: 17-Jan-1996 #sequence_revision 19-Apr-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;44,54/Binding site: carbohydrate (Asn)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  548 AAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEPTCLQTRL
134 AVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFH 193
                                                                                                                                         74 VVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYAL
                                                                                                                                                                                                                                                            17 GFLFLLFFWLDRSVLAKELARGAA---STQVCTGTDMKLRLPASPETHLDMLRHLYQGCQ
                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17 SAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEPTCLQTRL
                                                                                                                                                                                                                GTLQVLCFLL-----SLARGSEMGNSQAVCPGTLNGLSVTGDADNQYQTLYKLYEKCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        im, H.H.; Greaves, C.H.;
                                                                                                                                                                                                                                                                                                                                                                                                  17.78;
43.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18.0%;
                                                                                                                                                                                                                                                                                                                                                             Score 662; DB 2;
Pred. No. 4.2e-29;
4; Mismatches 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 674; DB 1; Pred. No. 7.5e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #text_change 13-Nov-1998
                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Koland,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of the recombinant protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   607
                                                                                                                                                                                                                       57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     experiment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Tyr)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hom
```

```
RESULT 13
S06142
Sportein-tyrosine kinase (EC 2.7.1.112) mrk-Y precursor - southern platyfish protein-tyrosine kinase (EC 2.7.1.112) mrk-Y precursor - southern platyfish N;Alternate names: epidermal growth factor receptor homolog; kinase-related C;Species: Xiphophorus maculatus (southern platyfish)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 18-Feb-2000 C;Accession: S06142; S13809
C;Accession: S06142; S13809
R;Wittbrodt, J; Adam, D; Malitschek, B; Maeueler, W; Raulf, F; Telling, Nature 341, 415-421, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross recommends and selection of the A;Title: Transcriptional activation of the A;Title: Transcription of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; McLeure type: DNA
A; Molecule type: DNA
A; Residues: 1-1166 <WIT>
A; Cross-references: EMBL: X16891; NID: g65290;
A; Cross-references: W; Schartl, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F; 26-1166/Product:
F; 707-972/Domain:
F; 715-723/Region:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A:Introns: 872/3; 898/1; 947/1; 979/3; 1025/3; 1056/1
C:Superfamily: epidermal growth factor receptor; protein kinase homology
C:Keywords: ATP; growth factor receptor; phosphotransferase; transmembran
F:1-25/Domain: signal sequence #status predicted <SIG>
F:26-1166/Product: kinase-related transforming protein (Tu) #status pred:
F:707-972/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                     Ş
                                                                                                                             밁
                                                                                                                                                                                    δĀ
                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: A; Accession: S06142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Title: Novel putative receptor tyrosine kinase encoded A; Reference number: S06142; MUID:90015140; PMID:2797166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Map position: Y
A; Introns: 872/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number: S13807; A; Accession: S13809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                          144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       194
                                                                                       282
                                                                                                                                              204
                                                                                                                                                                                                  223
                                                                                                                                                                                                                                                                                                                 163
                                                                                                                                                                                                                                                                                                                                                                                                                            103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        253
                                                                                                                                                                                                                                                                                                                                                                     87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGY 102
                                                                                                                                                                           CWGESSEDCQSLTRTVCAGGC-ARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG
                                                                              ICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRS
                                                                                                                                                                                                                                                       NLTEILSGGVKVSHNPLLCNVETINWWDIVDKTSNPTMNLIPHAFERQCQKCDHGCVNGS
                                                                                                                                                                                                                                                                                                                                                                  VLIAMNEVSTIPLVNLRLIRGQNLYEGNFTLLVMSNYQK-NPSSP--DVYQVGLKQLQLS 143
                                                                                                                                                                                                                                                                                                                                                                                                                         VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KYCQGTSNQMTM---LDNHYLKMKKMYSGCNVVLENLEITYTQENQDLSFLQSIQEVGGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VCVASCPHNFV 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SCVTACPYNYL 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QCCHDECAGGCSGPQDTDCFACRRFNDSGACVPRCPEPLVYNKLTFQLEPNPHTKYQYGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGA 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VR---GAEIVVKNNGANCPPCHEVCKG-RCWGPGPDDCQILTKTICAPQCNGRCFGPNPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCKDTCPPPKIYDIVSHQVVDNPNIKYTFGAACVKECPSNYVVTE---
                                                                                                                                        CWAPGPGHCOKFTKLLCAEQCNRRCRGPKPTDCCNEHCAGGCTGPRATDCLACRDFNDDG
                                                                                                                                                                                                                                                                                                        SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ·17.5%;
41.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 655.5; DB 1
Pred. No. 8.2e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         melanoma inducing PMID:1846957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIDN:CAA34770.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ьy
                               -GACV---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the melanoma-inducing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Xmrk oncogene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PID: 965285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PID:g65291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Telling,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 252
                               314
                                                                                                                                        263
                                                                                                                                                                                                                                                       203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   transforming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xiphophoru
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tyro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
A61632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        granulocyte-macrophage colony-stimulating factor precursor - sheep C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 28 C;Accession: A61632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:X53561; NID:g1800; PIDN:CAA37632.1; PID:g1801 C;Comment: This protein is a glycoprotein cytokine produced and secreted by va. C;Superfamily: granulocyte-macrophage colony-stimulating factor C;Keywords: cytokine; glycoprotein; growth factor; macrophage; monomer; T-ceil F;1-17/Domain: signal sequence #status predicted <SIG> F;1-17/Porduct: granulocyte-macrophage colony-stimulating factor #status predicted F;14/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          granulocyte-macrophage colony-stimulating factor precursor N;Alternate names: colony-stimulating factor 2; GM-CSF C;Species: Ovis orientalis aries, Ovis ammon aries (domestic C;Date: 31-Mar-1992 #sequence_revision 31-Mar-1992 #text_char C;Accession: JH0469; S16730
                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:X55991; NID:g6983759; PIDN:CAA39463.1; C;Superfamily: granulocyte-macrophage colony-stimulating factor F;1-17/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;O'Brien, P.M.; Rothel, J.S.; Seow, H.F.; Wood, Immunol. Cell Biol. 69, 51-55, 1991
A;Title: Cloning and sequencing of the cDNA for cA;Reference number: A61632; MUID:91331592; PMID:1A;Accession: A61632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gene 105, 275-279, 1991
A;Title: Cloning and expression of a cDNA encoding ovine A;Reference number: JH0469; MUID:92039044; PMID:1937025
A;Accession: JH0469
밁
                                           Qy
                                                                                                           В
                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1-144 <MCI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 1-144 < OAB>
                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R; McInnes,
                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                           548 AAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEPTCLQTRL 607
                                                       809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            668 DCWEPVQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        342 SSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77
                                                                                                              17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17 SAPTROPSPYTRPWOHYDAIKEALSLLNDSTDTAAVMDETVEVVSEMFDSQEPTCLQTRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLZEPTCLQTRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPF 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CSA--
                          ELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKDFLLVIPF 667
                                                                                                              SAPTRQPSPVTRPWQHVDAIKEALSLLNDSTDTAAVMDETVEVVSEMFDSQEPTCLQTRL
ELYKQGLRGSLTSLTGSLTMMASHYKKHCPPTQETSCETQIITFKSFKENLKDFLFIIPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DCWEPVQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ELYKQGLRGSLTSLTGSLTMMASHYKKHCPPTQETSCETQIITFKSFKENLKDFLFIIPF
                                                                                                                                                                                                                                                                                                                                                                                                                                              type: mRNA
                                                                                                                                                                                                                            101;
                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .; Haig, L
279, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----GMLEVDENGKRS-CKPCDGVCPKVCDG-IGIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        not compared
                                                                                                                                                                                                                                                 14.6%;
78.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14.78;
79.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11;
                                                                                                                                                                                                                          11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 549; DB Pred. No. 6.3e
                                                                                                                                                                                                                    Score 545; DB 1;
Pred. No. 1.1e-23;
1; Mismatches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A for ovine granulocyte-macrophage PMID:1869289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
.3e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (domestic sheep)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (domestic sheep)
                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            granulocyte-macrophage
                                                                                                                                                                                                                                                                                                                                                                  factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sheep
                                                                                                                                                                                                                                                                                                                                                                                         PID:g6983760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                              76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   607
```

colony-s

0

predicted

0

Various

colon

668 DCWEPVQE 675 ||||| |: 137 DCWEPAQK 144

Search completed: April 28, 2003, 13:42:22 Job time: 32.3846 secs

Copyright

GenCore version 5.1.4\_p5\_4578 (c) 1993 - 2003 Compugen Ltd.

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-821-883-2
3739
1 MRAAPLLLARAASLSLGFLF......EPVQEGAPPPPAAAHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             April 28, 2003, 13:37:08; Search time 55.3846 Seconds (without alignments) 1660.081 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        908470 seqs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A_Geneseq_101002:*
SIDS2/gcgdata/geneseq/geneseqp-emb1/AA199, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA199, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA199, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1991, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1994, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1995, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1997, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1997, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1999, DAT:

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000, DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981.AAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /SIDS2/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIDS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /SIDS2/gcgdata/geneseq/geneseqp-embl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'SIDS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gcgdata/geneseq/geneseqp-embl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gcgdata/geneseq/geneseqp-embl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           908470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          690
```

Pred. No. is the number of results predicted by chance to score greater than or equal to the score of the result being and is derived by analysis of the total score distribution result being p printed,

Result No.	Ø	Query Match	Query Match Length DB	BB	ID	Description
<u>,</u>	3739	100.0	690	22	AAE13109	Human HER500-hGM-C
2	3473.5	92.9	697	22	AAE13111	Human HER500-rGM-C
ω	2972	79.5	555	22	AAE13108	Human HER500 fusio
4	2957.5	79.1	564	22	AAE13110	Human HER500 fusio
<sub>5</sub>	2573.5	68.8	919	21	AAB21203	Human HER-2/neu fu
6	2573.5	68.8	919	23	AAM51148	Her-2/neu extracel
7	2410.5	64.5	1255	21	AAY92620	Human heregulin 2
8	2410.5	64.5	1255	22	AAE12130	Human tyrosine kin
9	2410.5	64.5	1255	22	AAB60167	HER2 transgene pla
10	2410.5	64.5	1255	23	AAU74545	Human HER2 (ErbB2)

		44 1551																			N	21									15 2405			12 2405	
	41.		41.	41.	41.	42.	43.	43.	43.	43.	43.	43.		52.	52.	52.	ъ	52.	5	56.	57.	5 58.	24 59.	.5 62.	.5 64.	.5 64.	.5 64.	.5 64.	.5 64.	.5 64.	.5 64.	Մ	.5 64.		.5 64.
	419	419	419	419	624	289	712	712	653	653	645	645	951	1256	1256	1256	1256	1256	1200	920	926	479	782	1223	1433	1255	1255	1255	1255	1255	1255	ū	ū	1255	1255
	22	22	22	23	11	22	23	21	23	21	22	22	21	23	21	23	22	21	21	23	23	22	18	23	14	23	23	23	23	22	22	21	21	20	17
	AAE09200	AAE09183	AAE09181	AAE20348	AAR08222	AAE13120	AAM51149	AAB21204	AAM51145	AAB21200	AAB61593	AAB60408	AAY44993	AAM51144	AAB21199	AAM51151	AAG62860	AAB21206	AAB21208	AAM51152 ·	AAM51153	AAE13112	AAW19764	AAU98923	AAR39568	AAU77114	AAM51143	AAE20479	AAE24067	AAG88267	AAB85458	AAY84780	19	AAW92406	AAW01111
																			•																
•		N	Human p68HER-2 gen	Human truncated HE	Extracellular port	Mature human HER-2	Her-2/neu extracel	Human HER-2/neu fu	Human Her-2/neu on	Extracellular HER-	Human ErbB2 extrac	Human ErbB2 oncopr	DC8scFv-erbB2EC fu	Rat Her-2/neu onco	Rat MER-2/neu prot	Mouse Her-2/neu on	acid seque	Her-2/neu			Mouse Her-2/neu ex			east		Her-2/neu	Her-2/neu	Her-2/	Human Her-2 protei	neu amino a		acid seque	HER-2/neu	Human HER-2/neu on	HER-2/neu protein.

## ALIGNMENTS

28-JAN-2002 (first entry) AAE13109; AAE13109 standard; Protein; 690 AA. Human HER500-hGM-CSF fusion protein construct.

Immunostimulatory fusion protein; IFP; antigen component; therapy; immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; pap protein; Ala Arg linker; membrane distal extracellular domain; PAP protein; Ala Arg linker; membrane distal extracellular domain; C-terminal tag; human; GM-CSF; membrane distal intracellular domain; C-terminal tag; human; GM-CSF; HER-2 protein; granulocyte-macrophage colony stimulating HER500-hGM-CSF fusion protein. factor;

Chimeric - Chimeric -Homo sapiens. Synthetic.

WO200174855-A2

11-OCT-2001.

30-MAR-2001; 2001WO-US10515.

30-MAR-2000; 2000US-193504P

(DEND-) DENDREON CORP

Laus R, Vidovic D, Graddis T;

```
SXCCCCCCCCCCCCXXXXFFFXXRR
                                                                                                                                              Claim
                                                                                                                                                                        of
An
                                                                                                                                                             immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -
                                                                                                                                                                                               2001-662965/76.
DB; AAD21565.
                                                                                                                                            7; Page 26; 59pp; English.
```

The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 hGM-CSF fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular domains, an Ala Ala linker, a mature human granulocyteinacrophage colony stimulating factor (GM-CSF) sequence and a C-terminal tag.

. . . .

Sequence 690 Ą

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
  601
                                                    541
                                                                            541
                                                                                                       481
                                                                                                                               481
                                                                                                                                                         421
                                                                                                                                                                                 421
                                                                                                                                                                                                          361
                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
TCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITFESFKENLKD
                                                                                                                                                                                                        GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                              GAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEY
                                                                                                                GAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEY
                                                                                                                                                                     APLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                                                                                        MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                               LGLDVPAAAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEP
                                                                                                                                                       APLITCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG
                                                                                                                                                                                                                                                            MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE
                                                                                                                                                                                                                                                                                                                                                                                                                  VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                                                                                                                                                                                                                                                                                                                                                VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                 LGLDVPAAAPARSPSPSTQPWEHVNAIQEARRLLNLSRDTAAEMNETVEVISEMFDLQEP
                                                                                                                            540
                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
  660
                         660
                                                                           600
                                                                                                    540
                                                                                                                                                       480
                                                                                                                                                                                                         420
                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
```

δÃ

á

Ş.

Ş

õ

Matches Query Match

690;

Conservative

Local

Similarity

100.0%; 0;

Score 3739; DB 22; Pred. No. 4.8e-226; Mismatches 0;

Indels Length

0;

Gaps

0;

õ

밁 á В

밁 Ş 밁

S

MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET

Query Match Best Local S Matches 641

Similarity

92.98; 91.78;

Conservative

19;

Indels Length

11; 697

Gaps 60

Ņ

Score 3473.5; Pred. No. 2.1e 19; Mismatches

DB 22; Sequence

A,

õ

В Ş 밁

```
RESULT 2
AAE13111
AAE13111
XX
AAE13111
XX
AAE13111
XX
AC
AAE1
XX
IMMU
DE HUMB
XX
IMMU
KW IMMU
KW IMMU
KW IMMU
KW IMMU
KW IMMU
KW Gend
KW Oval
XX
Chim
OS Chim
XX
Chim
OS Chim
XX
IMMU
CC IMMU
XX
XX
AN IMMU
CC IMMU

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                          nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 rGM-CSF fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature PAP protein, an Ala Arg linker, an ovalumin (OVA)-derived immunodominant octapeptide, an Ala linker, an ovalumin (OVA)-derived immunodominant octapeptide, tar granulocyte-macrophage colony stimulating factor (GM-CSF) sequence and a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chimeric -
Chimeric -
Chimeric -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Immunostimulatory fusion protein; IFP; antigen component; therapy; immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; GM-CSF; HER-2 protein; granulocyte-macrophage colony stimulating factor; ovalbumin-derived octapeptide; OVA; rat; HER500-rGM-CSF fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAE13111 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to immunostimulatory fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 7; Page 27; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Laus R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-MAR-2000; 2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAR-2001; 2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200174855-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human HER500-rGM-CSF fusion construct comprising OVA-derived peptide:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-662965/76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DENDREON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vidovic D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
Rattus norvegicus
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       proteins (IFP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     i.
```

```
RESULT 3
AAELI3108
ID AAEL
XX AAEL
XX AAEL
XX Immu
DE Humae
XX Immu
KW Immu
KW Immu
KW Immu
KW HERR
KW PAP
KW HERR
XX HOO20
XX HO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                     Immunostimulatory fusion protein; IFP; antigen component; therapy; immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; pap protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human;
                        30-MAR-2001;
                                                                                                                                                                   Chimeric
                                                                                                                                                                                       Chimeric
                                                                                                                                                                                                                                        HER-2
                                                                                                                                                                                                                                                                                                                                                                                                            Human HER500
                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAE13108 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 بر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MPNPEGRYTFGASCYTACPYNYLSTDVGS------GAGGMVHHRHRSSSTRSGGGDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EDFIKNLKGELFDIPFDCWKPVQKGAPPPP--AHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ESFKENLKDFLLVIPFDCWEPVQEGAPPPPAAAHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEMFDLQEPTCLQTRLELYKQGLRGSLTKLKGPLTMMASHYKQHCPPTPETSCATQIITF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SNEFSIQRPTCVQTRLKLYKQGLRGNLTKLNGALTMIASHYQTNCPPTPETDCEIEVTTF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MPNPEGRYTFGASCVTACPYNYLSTDVGSASIINFEKLGAGGMVHHRHRSSSTRSGGGDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                      protein; HER500
                        2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                  fusion protein construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    555
                                                                                                                                                                                                                                    protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
```

```
Query Match
Best Local S
Matches 549
                                                                                                                                   The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular
                                                                                  Sequence
                                                                                                                       domains and a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                Claim 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                 immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -
    il Similarity
549; Conser
                                                                                                                                                                                                                                                                                                                                                                              Page
                                                                                  555 AA;
79.5%; Score 2972; DB 22; ilarity 100.0%; Pred. No. 4.1e-178; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                26;
                                                                                                                                                                                                                                                                                                                                                                              59pp; English.
                                         Length
    0
  Gaps
```

```
60
    0
```

121 121 61 61 MRAAPLILARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYYLIAHNQVRQVPLQRLRI HLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYVLIAHNQVRQVPLQRLRI VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL 180 60 180

181 CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSL?RTVCA 240

181 CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA

241 241 GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES

301 301 MPNPEGRYTFGASCVTACPYNYLSTDVGSGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEE

361

γQ

В

Ş

멍

Š

В

δ 밁 Ş В δõ В ρy

В

361 

420 420 360 360 300 300 240

421 421 480

Ş

LGLDVPAAA

549

Ş 밁 Š

밁

```
RESULT 4
AAE13110
              ş
                                         밁
                                                               Ş
                                                                                               ₽
                                                                                                                      δ
                                                                                                                                                                                                              Query Match
Best Local S
Matches 549
                                                                                                                                                                                                                                      immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular domain, an Ala linker, an ovalbumin (OVA)-derived immunodominant octapeptide, HER-2 membrane distal intracellular domain and a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                               The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs components a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC) induced T-cell mediated cellular
                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 7; Page 26; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chimeric - Chimeric -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; OVA;
                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Laus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-MAR-2001; 2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAE13110 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200174855-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HER-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human HER500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (DEND-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           [mmunostimulatory
                 121
                                           61
                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                             immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated -
                                                                                                ш
VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                       MRAAPLLLARAASLSLGFLFLLFFWLDRSVLAKELARGAASTQVCTGTDMKLRLPASPET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-662965/76
                                                                                                                                                         549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein; ovalbumin-derived octapeptide; HER500
                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAD21566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DENDREON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vidovic D,
                                                                                                                                                                                                           564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unidentified.
                                                                                                                                                     79.18; nilarity 98.48; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fusion
                                                                                                                                                                                                             ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          fusion protein; IFP; antigen component;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein construct comprising OVA-derived octapeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Graddis
                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        564
                                                                                                                                                     Score 2957.5; DB 2: Pred. No. 3.4e-177; 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₿
                                                                                                                                                                                22;
                                                                                                                                                      Indels
                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           therapy;
onse; DC;
                                                                                                                                                                                 564;
                                                                                                                                                      9
                                                                                                                                                     Gaps
              180
                                         120
                                                                   120
                                                                                               60
                                                                                                                         60
                                                                                                                                                      1;
```

```
CCCCCXXX PTTTX PTX PTX X PTX X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
AAB2120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                      WPI; 2000-505976/45
                                                                                                                                                                                                                                                                                                                                         Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          colon cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human HER-2/neu fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-JAN-2000; 2000WO-US02164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200044899-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  breast cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB21203
                                                                                                                                                                                                                                                                                                                                                                                       (CÓRI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 VRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRNPQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TPTAENPEYLGLDVPAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TPTAENPEYLGLDVPAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MPNPEGRYTFGASCVTACPYNYLSTDVGS-----GAGGMVHHRHRSSSTRSGGGDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYODTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGESSEDCQSLTRTVCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAFPSTFKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MPNPEGRYTFGASCVTACPYNYLSTDVGSASIINFEKLGAGGMVHHRHRSSSTRSGGGDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HER-2/neu; oncogene; tyrosine kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
                                                                                                                                                                                                                                                                                                                                         Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0117976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  prostate cancer; ovarian cancer;
                                                                                                                                                                                                                                                                                                                                                                                             BEECHAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein;
                                                                                                                                                                                                                                                                                                                                         Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cytostatic; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..
```

The present sequence is a fusion protein comprising the extracellular domain and the phosphorylation domain of the human HER-2/neu is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth factor recep

HER-2/neu extracellular domain/phosphorylation domain fusion proteins useful for vaccinating against breast, ovarian, colon, lung and

Claim 2; prostate

Fig 12; 128pp;

English

Matches (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. HER-2/neu fusion proteins may be used to treat or prevent capable eliciting or enhancing an immune response to the HER-2/neu protein. They may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against these neoplasias. Sequence 856 484 424 736 676 616 556 436 330 136 796 364 330 330 330 496 330 376 330 316 330 256 196 215 155 275 76 95 16 35 LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ GLRELQLRSLTEILKGGYLIQRNPQLCYQDTILMKDIFHKNNQLALTLIDTNRSRACHPC DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 154 RSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPL 423 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC 274 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ ENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGL ENPEXLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGL 543 DDMGDLVDAEEYLVPQQGFFCPDPAPGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAP FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSQNEDLGPASPLDSTFYRSLLED NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 615 TANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV 555 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCYTACPYNYLSTDVGS-----SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC Similarity 919 Conservative 68.8%; 56.4%; 0, Score 2573.5; DB 2 Pred. No. 7.1e-153; 0; Mismatches 3; **ω** ,-21; Length 919; Gaps 915 75 855 735 375 675 329 329 329 195 1;

밁

Query Match

68.88;

Score 2573.5;

В

Length

Ş

8 8

밁 õ 밁 Ş 뭐 õ 밁 á 밁 Š 밁 Ş 밁 Ş 밁 Š 밁 Š 8 Ş В Š 문 δÃ 밁 Š

```
RESULT 6
AAM51148
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                     The present sequence is that of a fusion protein between the cx tracellular domain and phosphorylation domain of human Her-2/neu cx (see AAM5143), an oncogenic self-protein and target for anti-cancer vaccines. The fusion protein can be obtained by recombinant DNA cmethods. Her-2/neu overexpression correlates with a poor prognosis in breast and ovarian cancers. The invention provides Her-2/neu cx fusion proteins, nucleic acids encoding them, viral vectors, and cx fusion proteins, nucleic acids encoding them, viral vectors, and cx fusion proteins or nucleic acid molecules. Cx in preferred fusion proteins, the extracellular domain of a cx fusion protein fusion proteins or nucleic acid molecules. Cx fusion protein fusion proteins, the extracellular domain or cx phosphorylation domain (or its DeltaPD fragment). An immune cx esponse to Her-2/neu protein is elicited or enhanced by cadministering the fusion protein in the form of a vaccine, or by cx cransfecting cells of an animal ex vivo with a nucleic acid concerning the fusion protein, and delivering the transfected cells to the animal. The fusion proteins, nucleic acids, and isolated concer, especially breast, ovarian, colon, lung or prostate cancer in a patient. T cells that specifically react with a Her-2/neu conder to inhibit the development of cancer in a patient.
                                                                                                                                                                                                                                                                                                                                                                                                                                   Her-2/neu fusion protein for treating or preventing cancer by or enhancing an immune response to the protein, has Her-2/neu extracellular domain fused to Her-2/neu intracellular or
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAM51148;
                                                                                                                                                                                                                                                                                                                                                                                      Claim 2;
                                                                                                                                                                                                                                                                                                                                                                                                                      phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-AUG-2001; 2001WO-US24283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200212341-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Her-2/neu;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Her-2/neu extracellular domain-phosphorylation domain fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAM51148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                     Fig 12; 141pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard; Protein;
919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  oncogene; cancer; tumour; vaccine; human; p185;
inase; receptor; c-erbB2; gene therapy.
8
                                                                                                                                                                                                                                                                                                                                                                                                                      domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "e
654..919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BEECHAM BIOLOGICALS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "extracellular domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "phosphorylation domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   eliciting
```

```
RESULT 7
AAY92620
ID AAYS
XX
AC AAYS
                                                                                        Ş
                                                                                                                               Ş
                                                                                                                                                     밁
                                                                                                                                                                       ş
                                                                                                                                                                                            밁
                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                       문
                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 56.4 Matches 509; Conservative
 AAY92620;
                   AAY92620 standard; Protein;
                                                                       916
                                                                                                                                                                                                                                  676
                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                        616
                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                                                                               436
                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                           544
                                                                                                              856
                                                                                                                                                     796
                                                                                                                                                                        424
                                                                                                                                                                                            736
                                                                                                                                                                                                              364
                                                                                                                                                                                                                                                                                                               556
                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                       496
                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                         330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                136
                                                                                                                                  484
                                                                                                                                                                                                                                                                                                                                                                                                                                   376 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DVΡ
                                                                                                                                                                                         LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                           DVP 546
                                                                                                                        ENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGL
                                                                                                                                                   TANRPEDECYGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECYEECRVLQGLPREYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                  DDMGDLVDAEEYLVPQQGFFCPDPAPGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAP
                                                                                                                                                                                                                                                                        FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSQNEDLGPASPLDSTFYRSLLED
                                                                                                                                                                                                                                                                                                              NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK
                                                                                                                                                                                                                                                                                                                                                                                             LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                              ENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC
                                                                       918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               56.4%;
                                                                                                                                                                                                                                            ----GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 7.1e-153; 0; Mismatches 3;
                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     391;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                      555
                                                                                                             915
                                                                                                                                543
                                                                                                                                                    855
                                                                                                                                                                       483
                                                                                                                                                                                           795
                                                                                                                                                                                                            423
                                                                                                                                                                                                                                735
                                                                                                                                                                                                                                                    363
                                                                                                                                                                                                                                                                        675
                                                                                                                                                                                                                                                                                                               615
                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                              495
                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                     435
                                                                                                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94
                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                          329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۲
 ******************
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           77
                                                                                                                                                                                                                                                                                                                                             FT
                                                                                                                                                                                                                                                                                                                                                     H H H
                                                                                                                                                                                                                                                                                                                                                                                     FT
                                                                                                                                                                                                                                                                                                                                                                                                                 14 H
                                                                                                                                                                                                                                                                                                                                                                                                                                              3
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Key
Domain
                  Domain
                                                                              Region
                                                                                                                                                             Region
                                                                                                                                                                                         Region
                                                                                                                                                                                                             Domain
                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                              Doma in
                                                                                                                                                                                                                                                                                          Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         self-protein; concell-associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-AUG-2000
                                                Region
                                                                                                             Region
                                                                                                                                 Domair
                                                                                                                                                                                                                                                                                                                         Region
                                                                                                                                                                                                                                                                                                                                                      Region
                                                                                                                                                                                                                                                                                                                                                                          Domain
                                                                                                                                                                                                                                                                                                                                                                                                      Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Heregulin 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Regior
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Her2; vaccination; cytotoxic T-lymphocyte immunity; cancer; breast cancer; prostate cancer; ted peptide antigen; foreign epitope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                              /label= insertion_region
/note= "suitable for foreign
695..709
                                                                                                                                  655..1010
                                                                                                                                                               653..667
                   /label= insertion_region
/note= "suitable for for
1011..1235
                                                         /label= insertion_region
/note= "suitable for foreign
                                                                                                                                        /label= insertion_region
/note= "suitable for foreign epitope
                                                                                                                                                                                                                     /label= insertion_region
/note= "suitable for foreign
                                                                                                                                                                                                                                                                                                                                                                           324..483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifier:
1..173
                                                                                                                                                                       /label= insertion_region
/note= "suitable for foreign epitope
                                                                                                                                                                                                                                                                     /label= insertion_region
/note= "suitable for foreign epitope insertion
                                                                                                                                                                                                                                                                                                    /label- insertion_region
/note- "suitable for for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note- "mature polypeptide"
                                                                                                                                                                                                   'label-
                                                                                                                                                                                                                                                    /label=
                                                                                                                                                                                                                                                                                                                                /label= insertion_region
/note= "suitable for foreign epitope
                                                                                                                                                                                                                                                                                                                                                                                   /label= insertion_region
/note= "suitable for for
                                                                                                                                                                                                                                                                                                                                                                                                                 /label= insertion_region
/note= "suitable for foreign epitope insertion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label= insertion_region
/note= "suitable for foreign
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label= insertion_region
/note= "suitable for foreign
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label= insertion_region
/note= "sultable for foreign epitope insertion"
                                                                                                                       label-
                                                                                                                                                                                                                                                                                                                                                                 label
                                                                                                                                                                                                                                                                                                                                                                                                                                              'labe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (label
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'label- N-termina]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "suitable for
                                                                                                                                                                                                   Transmembrane_domain
          C-terminal_domain
                                                                                                                     Tyrosine_kinase_domain
                                                                                                                                                                                                                                                    Cysteine_rich_domain
                                                                                                                                                                                                                                                                                                                                                              Ligand_binding_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                              Cysteine_rich_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gion
foreign
                                                                                                                                                                                                                                                                                                     foreign
                                                                                                                                                                                                                                                                                                                                                                                  foreign epitope
                              foreign
                                                                                                                                                                                                                                                                                                     epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           epitope insertion
                            epitope
                                                          epitope
                                                                                        epitope
                                                                                                                                                                                                                        epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  epitope insertion"
                                                                                                                                                                                                                                                                                                     insertion"
                              insertion
                                                           insertion
                                                                                         insertion
                                                                                                                                         insertion"
                                                                                                                                                                       insertion
                                                                                                                                                                                                                        insertion"
                                                                                                                                                                                                                                                                                                                                  insertion"
                                                                                                                                                                                                                                                                                                                                                                                     insertion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               insertion"
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                       В
                                                                                                                      Š
                                                                                                                                                             В
                                                                                                                                                                                           ş
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                           밁
                      믕
                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cresponse. Subdominant CTL peltopes, antibody binding regions and covered in the crysteine residues involved in disulfide bonds are preserved in the immunogenized forms. Regions suitable for the insertion of foreign T immunogenized forms. Regions suitable for the insertion of foreign T chelper epitopes were identified (see features table). The method cis used for inducing immune responses against weakly immunogenic cell-associated peptide antigens (PA) such as those associated with cancers (self-proteins), e.g. human prostate specific membrane antigen (PSM), hereguin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CT (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 CT (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 CT first T helper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/murine FGF8b comprising a substantial capatr of all known and predicted CTL and B-cell epitopes of the respective. The method is used to treat prostate, prostate/preast or breast cancer when the PA is human PSM, human PSM, breather, prostate/preast or breast cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Steinaa L, Mouritsen S, Nielsen KG, Gautam A, Birk P, Karlsson G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 62; Page 193-198; 220pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Inducing immune responses to weakly immunogenic, peptide antigens for the treatment of breast and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-OCT-1998;
20-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          05-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This is the human heregulin 2 (Her2) sequence. Immunogenic analogues of Her2 can be used in the claimed method as an autovaccine to induce a CTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-349917/30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (MEBI-) M & E BIOTECH AS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W0200020027-A2
                                                                                                                                                                                             215
                    316
                                                                                         256
                                                                                                                          275
                                                                                                                                                               196
                                                                                                                                                                                                                                    136
                                                                                                                                                                                                                                                                     155
                                                                                                                                                                                                                                                                                                        76
                                                                                                                                                                                                                                                                                                                                          95
                                                                                                                                                                                                                                                                                                                                                                             16
                                                                                                                                                                                                                                                                                                                                                                                            35 LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                                                                                                                                                                                                                                         DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                       LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC
LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC
                                                                                                                                                           SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                   GLRELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                  PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375
                                                                                                                                                                                                                                                                                                                                                                           LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                                                                                                                                                GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                        DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PA is human PSM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98DK-0001261.
98US-0105011.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-DK00525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64.5%;
41.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FGF8b and Her2, respectively.
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 2410.5; DB 21; Length 1255; Pred. No. 1.7e-142; 0; Mismatches 2; Indels 727; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Haaning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tumor associated prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Leach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dalum
                                                                                         315
                                                                                                                          329
                                                                                                                                                                                               274
                                                                                                                                                                                                                                195
                                                                                                                                                                                                                                                                   214
                                                                                                                                                                                                                                                                                                       135
                                                                                                                                                                                                                                                                                                                                          154
                                                                                                                                                                                                                                                                                                                                                                           75
                                                                                                                                                                                                                                                                                                                                                                                                               94
                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۲,
                                                                                                                                                                            RESULT 8
AAE12130
   Therapeutic compound; major histocompatibility complex; vaccine; antigenic peptide; MHC; immunoregulatory; immune response; HER-2;
                                                   Human tyrosine kinase-type receptor, HER-2
                                                                                         18-DEC-2001
                                                                                                                                                           AAE12130 standard; Protein; 1255
```

(first entry)

\$

		;	į
	AFDNLYYWDODDDDERGADDSTFKGTDTAENDEYLGLDVD 1254	1216	Db
	AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546	508	Qy
P 1215	PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP	1156	В
\$P 507	PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFS	448	Qy
G 1155	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPRE	1096	рь
G 447	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG	388	Qy
A 1095	APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGA	1036	Db
A 387	GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDJGMGAA	330	Qy
P 1035	FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP	976	Db
329		330	Qy
E 975	MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECKPRFRELVS	916	망
329:		330	Qy
L 915	PNHVKITDEGLARLLDIDETEYHADGGKVPIKWMALESILRRRETHQSDVWSYGVTVWEL	856	дь
329		330	Qy
S 855	LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS	796	DЬ
329		330	Qy
º 795	KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ	736	Db
- 329		330	Qy
Y 735	KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY	676	ф
- 329		330	οy
,I 675	FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVVLGVVFGILI	616	ф
- 329 ·		330	Qy
K 615	NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK	556	Вр
- 329		330	Qy
V 555	TANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV	496	B
- 329		330	Qy
н 495	LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH	436	Вb
- 329		330	δõ
I 435	${\tt FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGR}$	376	망
- 329		330	Qy

Key

375

329

329

329

```
The invention relates to synthetic therapeutic compounds (antigenic peptides) with enhanced binding to major histocompatibility complex (MHC) molecules and enhanced immunoregulatory properties relative to their natural counterparts. Compounds of the invention are useful for inducing an immune response in a subject and for use in adoptive immunotherapy. They are useful as components of anti-cancer vaccines and to expand immune effector cells that are specific for cancers characterised by expression of the breast cancer antigen, HER-2. Polynucleotides that encode peptides of the invention are useful as hybridisation probes and as primers for the detection of genes of gene transcripts that are expressed in antigen presenting cells (APCs), to confirm transduction of polynucleotides into host cells. The present sequence is human tyrosine kinase-type receptor, HER-2. Compounds of the invention are designed based on the HER-2 antigenic peptide
                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel synthetic therapeutic compound for inducing immune response and for use in adoptive immunotherapy, has enhanced binding to major histocompatibility molecules and enhanced immunoregulatory properties
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-616284/71.
N-PSDB; AAD19731.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nicolette CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-MAR-2001; 2001WO-US40328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-SEP-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200168677-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             adoptive immunotherapy; anti-cancer; breast cancer antigen; APC;
antigen presenting cell; human; tyrosine kinase-type receptor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (GENZ ) GENZYME CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                            136
                                                                                                                                    215
                                                                                                                                                                                                                                                     76
                                                                                                                                                                                                                                                                                         95
                                                                                                                                                                                                                                                                                                                               16
                                                                                                                                                                                                                                                                                                                                                35 LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                  SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                            GLRELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                                             LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                                                                                          GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                   DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                               SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                          510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4; Page 63-67;
                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1255
                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-0527487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers 774..782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note-
                                                                                                                                                                                                                                                                                                                                                                                                                          64.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Antigenic epitope"
                                                                                                                                                                                                                                                                                                                                                                                                      Score 2410.5; DB 2:
Pred. No. 1.7e-142;
0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                           22;
                                                                                                                                                                                                                                                                                                                                                                                                      Indels 727; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1255;
                   315
                                                         329
                                                                                                                                  274
                                                                                                                                                                          195
                                                                                                                                                                                                              214
                                                                                                                                                                                                                                                   135
                                                                                                                                                                                                                                                                                         154
                                                                                                                                                                                                                                                                                                                               75
                                                                                                                                                                                                                                                                                                                                                                  94
                                                                                                                                                                                                                                                                                                                                                                                                      ۲.
RESULT 9
AAB60167
ID AAB6
XX
AC AAB6
XX
DT 03-A
XX
                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                            1216
                                                                                                                                                                                                                                                                       1156
                   03-APR-2001
                                                                                                                                                                                                                                                                                                                                                1096
                                                                                                                                                                                                                                                                                                                                                                                                                            1036
                                                         AAB60167;
                                                                                               AAB60167
                                                                                                                                                                                                                                                                                                           448
                                                                                                                                                                                                                               508
                                                                                                                                                                                                                                                                                                                                                                                      388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        856 PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         436 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                            AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                   KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                                                                          APGAGGMVHHRHRSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK
                                                                                                                                                                                            AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVVLGVVFGILI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TANRPEDECYGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECYEECRYLQGLPREYV 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA
                                                                                               standard;
                   (first entry)
                                                                                               Protein;
                                                                                           ₹
                                                                                                                                                                                                                                 546
                                                                                                                                                                                              1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----
```

1095

1035

329

387

975

329 915 855

329

795

329 735 329

329

1215

329

675

615

329

Ş 밁 δ 밁 S В δÃ 밁 Š

196

밁

HER2 transgene

plasmid

construct encoded protein

```
S
                                                                                                        В
                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               $\times \text{CCCCCC\text{CCCCC\text{CCCCC\text{CCCCC\text{CCCC\text{CCCC\text{CCCC\text{CCCC\text{CCCC\text{CCCC\text{CCCC\text{CCCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CCC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{CC\text{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention provides a method of treating cancer by administering a conjugate of anti-ErbB antibody with a maytansinoid. In particular, the antibody is directed against ErbB2 (also known as HER2 and pl85neu). The method is particularly useful in the treatment of breast, overian, stomach, endometrial, salivary gland, lung, kidney,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Treating tumors, particularly breast cancers, receptor and does not respond to an anti-ErbB conjugating the antibody to a maytansinoid -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-JUN-1999; 99US-0141316.
16-MAR-2000; 2000US-0189844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              colon, colorectal, thyroid, pancreatic, prostate and bladder cancers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 3; Fig 4; 92pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Erickson S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-JUN-2000; 2000WO-US17229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200100244-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human;
                                        330
                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         136
                                                                                                           376
                                                                                                                                                                                                                                                     316
                                                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                                                                                                                                  256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35 LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 154
                                                                                                                                                                                                                                                                                                                                                                                           SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-061962/07.
DB; AAF24297.
                                                                                                        FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                     PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HER2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schwall R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ErbB2 receptor; p185neu; maytansinoid conjugate; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 2410.5; DB 2;
Pred. No. 1.7e-142;
); Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 22; Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       antibody,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels 727; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       overexpress an ody, comprises
                                                                                                                                                                                                                                                                                                                                                                                              315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94
                                                                                                                                                                                  329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ErbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
ARESULT 10
AAU74545
ID AAU74
XX AAU74
XX AAU74
XX AAU74
XX DT 23-AF
DE Human
XX Huma
```

	AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254	1216	Db
	AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546	508	Ωy
1215	PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP	1156	Dъ
507	PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEXLTPQGGAAPQPHPPPAFSP !	448	Qy
1155		1096	DЬ
447	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG	388	Qy
 1095		1036	Db
387	GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA	330	Qy
1035	FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLYPQQGFFCPDP :	976	Db
329		330	; Qy
975	MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE	916	Дb
329		330	Qy
915	PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL	856	Вр
329		330	Qy
855	LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS {	796	Дb
329		330	Qy
795	KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ	736	рь
329		330	Qy
735:	KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY	676	Дb
329		330	ργ
675	FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVVLGVVFGILI	616	Дb
 329		330	Qy
615	NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK (	556	ДЬ
329		330	Qy
555	TANRPEDECYGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGI.PREYV	496	Db
329		330	Qy
495	LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH	436	Ф

Human; HER2; ErbB; epidermal growth factor receptor; receptor; anti-ErbB antibody-maytansinoid conjugate; cancer; tumour; breast; ova stomach; endometrium; salivary gland; lung; kidney; colon; colorectum; thyroid; pancreas; prostate; bladder; ErbB2; neuronal disorder; glial disorder; astrocytal disorder; hypothalamic disorder; glandular disorder; macrophagal disorder; epithelial disorder; stromal disorder; blastocoelic disorder; inflammatory disorder; Human HER2 (ErbB2) polypeptide. 23-APR-2002 AAU74545; AAU74545 standard; (first entry) Protein; ⋧

ovary;

```
á
                                                                            Ş
                                                                                                                          밁
                                                                                                                                                                 ş
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               $\times CCCCCCCCCCCCC\times CCCCCCC\times C\times CCCCCCCC\times C\times C\tim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 510; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to treating a tumour in a mammal, where the tumour is characterised by the overexpression of an epidermal growth factor receptor (ErbB) and does not respond or responds poorly, to treatment with an anti-ErbB antibody, comprising administering to the mammal an anti-ErbB antibody-maytansinoid conjugate. The method is useful for treating cancer or tumours of the breast, overy, stomach, endometrium, salivary gland, lung, kidney, colon, colorectum, thyroid, pancreas, prostate and bladder, preferably breast cancer. The breast cancer is a metastatic breast cancer or an aggressive form of metastatic breast cancer which overexpresses ErbB2. The method is also useful for treating neuronal, glial, astrocytal, hypothalamic, glandular, macrophagal, epithelial, stromal, blastocoelic, inflammatory, angiogenic and immunological disorders. This sequence represents the human HER2 (ErbB2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (ERIC/)
(SCHW/)
(SLIW/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Treating tumour characterised by overexpression of epidermal factor receptor, ErbB or cancer in mammal, comprises administanti-ErbB antibody-maytansinoid conjugate to the mammal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-MAR-2000;
05-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Erickson S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US2002001587-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo
                                                                                                                                                                                                                                                                                                       136
                                                                                                                                                                        275
                                                                                                                                                                                                                 196
                                                                                                                                                                                                                                                             215
                                                                                                                            256
                                                                                                                                                                                                                                                                                                                                              155
                                                                                                                                                                                                                                                                                                                                                                                          76
                                                                                                                                                                                                                                                                                                                                                                                                                               95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35
                                                                                                                                                                                                                                                                                                SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                             SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2002-163686/21
                                                                                                                          PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ) ERICKSON S.
) SCHWALL R.
) SLIWKOWSKI M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABK14058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F1g 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64.5%;
ilarity 41.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schwall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-189844P.
2000US-238327P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001US-0811123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sliwkowski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 2410.5; DB 23
Pred. No. 1.7e-142;
0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 23; Length 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  administering
nal -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
      329
                                           375
                                                                                   329
                                                                                                                                                                      329
                                                                                                                                                                                                               255
                                                                                                                                                                                                                                                                                                  195
                                                                                                                                                                                                                                                                                                                                            214
                                                                                                                                                                                                                                                                                                                                                                                     135
                                                                                                                                                                                                                                                                                                                                                                                                                               154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>بر</u>
د د
RESULT 11
AAW01111
ID AAW01
XX AAW01
XC AAW01
XX 01-JA
XX HER-2
XX HER-2
KW breas
KW prost
                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
HER-2/neu; c-erbB1; p185; oncogene; tyrosine protein kinase; breast cancer; ovary cancer; colon cancer; lung cancer; prostate cancer; immunisation; tumour; vaccine; vector.
                                                                                                                                                                                                                                                                                                                        1216
                                                                                                                                                                                                                                                                                                                                                                                                           1156
                                                                              HER-2/neu protein
                                                                                                                            01-JAN-1997
                                                                                                                                                                      AAW01111;
                                                                                                                                                                                                               AAW01111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .856
                                                                                                                                                                                                                                                                                                                                                                                                                                                 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      736
                                                                                                                                                                                                                                                                                                                        PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG
                                                                                                                                                                                                                                                                                                                                                                  AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQTAKGMSYLEDVRLVHRDLAARNVLVKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI
                                                                                                                                                                                                                                                                                                                                                                                                         PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPISPREG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -- GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLV,VVLGVVFGILI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH
                                                                                                                                                                                                               standard;
                                                                                                                                                                                                               Protein;
                                                                                                                                                                                                                 1255
```

------------

329

975

1035

1095 387

447

507

329

915

329

329

855

329

329

675

7

329

615

329

555

329

₽

```
밁
                                       Ş
                                                                밁
                                                                                         Ş
                                                                                                                     В
                                                                                                                                          Ş
                                                                                                                                                                        В
                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 64.3%;
Best Local Similarity 41.1%;
Matches 509; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human HER-2/neu protein (AAW01111), also called p185 or c-erbB2, is the product of the HER-2/neo oncogene (see also AA740739). The protein is over-expressed in various cancers, including breast, ovarian, colon, lung and prostate. The intracellular domain of the protein can be used to immunise an animal against a malignancy with which the oncogene is associated. The polypeptide can be produced in transformed host cells for use in immunisation. Alternatively, animal cells are transfected in vivo or ex vivo with a viral vector that directs expression of the polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Key
Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA encoding HER-2-neu poly:peptide(s) - used for prevention or treatment of malignancies with which the HER-2/neu oncogene is associated
                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 2; Page 56-61; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1996-455361/45.
N-PSDB; AAT40739.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UNIW ) UNIV WASHINGTON.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      03-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9630514-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                           196
                                                                                                                                                                                                                                           155 GLRELQLRSLTEILKGGYLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
               376 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                        256
                                                                                                                                                 275
                                                                                                                                                                                                      215
                                                                                                                                                                                                                               136
                                                                                                                                                                                                                                                                                  76
                                                                                                                                                                                                                                                                                                             95
                                                                                                                                                                                                                                                                                                                                     16 LPPGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ 75
                                                                                                                                                                                                                                                                                                                                                   35 LARGAASTQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ
                                                                                                                   SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 154
                                                                 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375
                                                                                                                                                                                                                             GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                                                                                                                                                             1255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disis ML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 95US-0414417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96WO-US01689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers 676..1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label= Intracellular_domain
/note= "claimed domain, useful for immunisation"
                                                                                                                                                                                                                                                                                                                                                                                      Score 2405.5; DB 17; Length 1255;
Pred. No. 3.5e-142;
0; Mismatches 3; Indels 727; Gaps
                                                                                                                     315
                                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                                       214
                                                                                                                                                                                                                                                                                                                                                               94
                                                                                            329
                                                                                                                                               329
                                                                                                                                                                        255
                                                                                                                                                                                                   274
                                                                                                                                                                                                                             195
                                                                                                                                                                                                                                                                                                                                                                                        1;
 FΗ
кеу
```

cell; immunisation;	2406 standard; Protein; 1255 AA. 2406; PR-1999 (first entry) n HER-2/neu oncogene protein. 2/neu; oncogene; immune response; T cell; B gnancy; treatment; tumour. sapiens. Location/Qualifiers	ULT 12 92406 AAW9 AAW9 21-A Huma HER- mal1 Homo	RESI AAW XXX AC AC XXX XXX AC AC XXX XXX XXX XXX
PQGGAAPQPHPPPAFSP 1215	PLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLT PLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLT AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546	1156 508 1216	Db Db
VNQPDVRPQPPSPRE             VNQPDVRPQUPSPRE	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPE	388 1096	D Dy
DAEEYLVPQQGFFCPDP 1035 EGAGSDVFDGDLGMGAA 387	FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVGAGGMVHHRHRGSSTRSGGGDLTLGLEPSEEEAPRSPLAPS	976 330 1036	Oy Db
WMIDSECRPRFRELVSE 975	MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKC	916 330	Qy Db
THQSDVWSYGVTVWEL 91	PNHVKITDEGLARLLDIDETEYHADGGKVPIKWMALESILRRH	330	Qy Db
	LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLED	330 796 330	Qy Db
LRKVKVLGSGAFGTVY 73	KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKET	<b>ω ω 7</b>	Oy Db
VGILLVVVLGVVFGILI 675	FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVV	330 330	oy oy
CPSGVKPDLSYMPIWK 61	NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVA	σω	.; ₽ VQ
CVEECRVLQGLPREYV 55	TANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQ	φω	Qy Db
TVPWDQLFRNPHQALLH 495	) CHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHT	330 436	Оу

. : .

```
Q
     В
                                                 S
                                                                                                        밁
                                                                                                                                                 δ
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            $\times \times \
                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-APR-1996;
17-MAR-1993;
12-AUG-1993;
31-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence represents the human HER-2/neu encogene protein. A fragment of this protein is used in a method for eliciting or enhancing an immune response to HER-2/neu protein. The polypeptide can stimulate T cells and B cells to produce an immune response to the HER-2/neu protein. The method can be used for immunisation against a malignancy in which the HER-2/neu oncogene is associated and in the treatment of an existing tumour, or to prevent tumour occurrence or reoccurrence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Use of HER-2/neu polypeptides - for eliciting an immune response to an HER-2/neu associated malignancy, particularly for treating or preventing tumours
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1999-152835/13.
N-PSDB; AAX01912.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 3; Column 31-38; 26pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-APR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US5869445-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UNIW ) UNIV
                                                                                                        376
                                                                                                                                                                                                                   316
                                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                                                                         256
                                                                                                                                                                                                                                                                                                                                                                           275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              155 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
436 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                                                                                                                                                                                                                                               196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                        FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI
                                                                                                                                                                                                                                                                                                                                                                                                                               SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tch 64.3%; al Similarity 41.1%; 509; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disis ML;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WASHINGTON.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96US-0625101.
93US-0033644.
93US-0106112.
95US-0414417.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96US-0625101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          676..1255
/note= "region which elicits immune response"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 2405.5; DB 20 Pred. No. 3.5e-142; 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 20; Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels 727; Gaps
                                                                                                                                                                                                                                                                        ........
                                                    329
                                                                                                                                                                                                                 375
                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                            255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154
                                                                                                                                                            329
                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . :
```

			1
	AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254	1216	망
	AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546	508	δδ
1215	PLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEXLTPQGGAAPQPHPPPAFSP	1156	B
507	סי –	448	QΨ
1155	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG	1096	망
447		388	Qy
1095	APGAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVEDGDLGMGAA	1036	뭥
387		330	Qy
1035	FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP	976	В
329		330	δ
975	MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE	916	Db
329		330	Ş
915	PNHVKITDEGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL	856	ġ
329		330	ρ
855	LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAAR.NVLVKS	796	DЬ
329		330	δõ
795	KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ	736	Ъ
329		330	Qy
735	KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY	676	DЬ
329		330	Qy.
<b>67</b> 5	FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI	616	В
329		330	οy
615	NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK	556	Ъ
329		330	Qy
555	TANRPEDECVGEGLACHOLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV	496	В
329		330	ΩУ

RESULT 13 AAB21198 12-JAN-2001 AAB21198; AAB21198 standard; protein; 1255 (first entry)

₿

Human HER-2/neu protein

colon cancer. Human; HER-2/neu; oncogene; tyrosine kinase; cytostatic; vaccine; breast cancer; prostate cancer; ovarian cancer; lung cancer;

Homo sapiens.

WO200044899-A1

```
S
                    밁
                                   5
                                                            멍
                                                                              Š
                                                                                                    В
                                                                                                                    S
                                                                                                                                            밁
                                                                                                                                                               8
                                                                                                                                                                               밁
                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                     8 B
                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 64.3%;
Best Local Similarity 41.1%;
                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence is the human HER-2/neu protein. It is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth correction (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. An HER-2/neu fusion protein comprising a HER-2/neu extracellular domain fused to a HER-2/neu phosphorylation domain may be used to treat or prevent cancer by eliciting or enhancing an immune response to the HER-2/neu protein. It may be used to treat or prevent cancer by eliciting or enhancing an immune response to the HER-2/neu protein. It may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HER-2/neu extracellular domain/phosphorylation domain fusion proteins useful for vaccinating against breast, ovarian, colon, lung and prostate cancers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 52; Fig 7; 128pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-505976/45.
N-PSDB; AAA89736.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-JAN-2000;
                                         330
                                                             436
                                                                                                                        330
                                                                                                                                                                 330
                                                                                                                                                                                                                              196
                                                                                                                                                                                                                                                                      136
                                                                                                                                                                                                                                                                                         155
                   496 TANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV 555
                                                                                  330
                                                                                                     376
                                                                                                                                              316
                                                                                                                                                                                     256
                                                                                                                                                                                                         275
                                                                                                                                                                                                                                                  215
                                                                                                                                                                                                                                                                                                                                                   76
                                                                                                                                                                                                                                                                                                                                 95
                                                                                                                                                                                                                                                                    DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 154
                                                            LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                 LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGS-----
                                                                                                                                                                                                                            SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                                                                                                                                                        SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                                                                                                    FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                            PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA
                                                                                                                                                                                     LHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORIXA CORP.
SMITHKLINE BEECHAM
                                                                                                                                                                                                                                                                                                                                                                                                                                     1255 AA;
                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gheysen D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000WO-US02164.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0117976.
                                                                                                                                                                                                                                                                                                                                                                                            Score 2405.5; DB 21
Pred. No. 3.5e-142;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                 DB 21; Length 1255
                                                                                                                                                                                                                                                                                                                                                                                            Indels 727;
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                       329
                                                                                                                                                                                     315
                                                                                                                                                                                                                            255
                                                                                                                                                                                                                                                                     195
329
                                                                                329
                                                                                                                                                                 329
                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                274
                                       329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                            <u>ن</u>
믔
                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                      멅
                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                     뭐
                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맖
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맒
         02-OCT-1998;
                             01-OCT-1999;
                                                 13-APR-2000
         98US-0165192
                              99WO-CA00912
```

	556	NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 6	615
	330	3	329
	616	FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI 6	675
	330	3	329
	676	KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 7	735
	330	3	329
	736	KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 7	95
	330	3	329
	796	LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 8	55
	330	3	329
	856	PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL 9	915
	330	3	29
	916	MTEGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 9	975
	330	3	29
-	976	FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP 1	1035
•	330 1036	GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 3	387 . 1095
	388 1096	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPDSPREG 4	447 1155'' '
	448 1156	ДРНРРРАFSP 5             ДРНРРРАFSP 1	215
	508 1216	AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546	
SULT Y847	SULT 14 784780 AAY847	80 standard; Protein; 1255 AA.	
	AAY84780	4780;	
	08-AC	0 (first entry)	
	Amino	o acid sequence of the SPLICE erbB-2 receptor protein.	
	SPLICI tumor bone i	CE erbB-2 receptor protein; cell transformation disorder; cance r cell proliferation; tissue degeneration; arthropathy; resorption; inflammatory disease; degenerative disorder; d healing.	H.
	Ното	sapiens.	
	WO20	0020579-A1.	

```
Ş
                                                                                                                                                                                                                          S
Š
                            밁
                                                     5
                                                                                    밁
                                                                                                                                          밁
                                                                                                                                                                     Š
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 64.3%;
Best Local Similarity 41.1%;
Matches 509; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence represents a SPLICE erbB-2 receptor protein. The protein has an in-frame deletion of 16 amino acids, 2 of which are conserved cysteine residues, compared to the unspliced protein. The erbB-2 polynucleotide is used to construct probes for detecting disorders of cell transformation such as cancer. Antibodies to the protein may be used to detect SPLICE erbB-2 in a sample. Agents (e.g. antisense oligonucleotides) which inhibit the expression of SPLICE erbB-2 are useful for reducing tumor cell proliferation and treating cancer. Substances which stimulate SPLICE erbB-2 are useful for treating conditions involving damaged cells including conditions in which degeneration of tissue occurs, such as arrhropathy, bone resorption, inflammatory diseases, degenerative disorders of the central nervous system and wound healing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic acid encoding an erbB 2 receptor protein designated SPLICE erbB-2, inhibitors of the protein are useful for treatment of cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-303768/26.
N-PSDB; AAA14812.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 3; Fig 2; 60pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Muller WJ,
                                                                                                                                          436
                                                                                                                                                                                                                                                         316
                                                                                                                                                                                                                                                                                                                                                                                                                            (UYMC-) UNIV MCMASTER
  330
                                                                                                                330
                                                                                                                                                                        330
                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                       330
                                                                                                                                                                                                                                                                                                                                                                         196
                                                                                                                                                                                                                                                                                                                                                                                                  215
                                                                                    496
                                                                                                                                                                                                    376
                                                                                                                                                                                                                                                                                                                256
                                                                                                                                                                                                                                                                                                                                            275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         76 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG
                                                                                                                                                                                                                                                                                                              SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC
                            NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWK 615
                                                                                                                                         LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH 495
                                                                                                                                                                                                 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI 435
                                                                                                                                                                                                                                                         PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLA 375
                                                                                  TANRPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 2405.5; DB 21; Length 1255; Pred. No. 3.5e-142; O; Mismatches 3; Indels 727; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154
329
                                                        329
                                                                                                              329
                                                                                                                                                                      329
                                                                                                                                                                                                                             329
                                                                                                                                                                                                                                                                                    329
                                                                                                                                                                                                                                                                                                                315
                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                      255
                                                                                                                                                                                                                                                                                                                                                                                                 274
                                                                                                                                                                                                                                                                                                                                                                                                                             195
                                                                                                                                                                                                                                                                                                                                                                                                                                                         214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲.
```

Qy	330 329
밁	676 KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY 735
Qy	330 329
뫄	736 KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ 795
Qy	330 329
dd ;	796 LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS 855
Qy	330 329
Ъ	856 PNHVKITDEGLARLLDIDETEYHADGGKVPIKWMALESILRRRETHQSDVWSYGVTVWEL 915
Qy	330 329
рь	916 MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRFRELVSE 975
Qy	330 329
Db	976 FSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP 1035
Qy	330GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA 387
라	LGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMG
Qy	SLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSE
В	SETDGYVAPLTCSPQPEYVNQPDVRPQPPS
Qy	448 PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP 507
망	<u>LPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAF</u>
. 9	508 AFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546
6	EUNLXXWUQUPPERGAPPSTERGTPTAENPEX LG
SU B8	LT 15 5458 AAB85458 standard; Protein; 1255 AA.
ž A S	AAB85458;
333	25-SEP-2001 (first entry)
YE?	Human HER-2/neu protein.
K K K	Antigen-presenting cell; immunogenic; immune response; HER-2/neu; oncogene; cancer; cytostatic; vaccine; p185; c-erbB2.
808	Homo sapiens.
PN >	WO200153463-A2.
g g	26-JUL-2001.
Y P >	19-JAN-2001; 2001WO-US01850.
Y P ?	21-JAN-2000; 2000US-0177545.
Y P A	(CORI-) CORIXA CORP.
Y P S	Cheever MA, Hand-Zimmermann S;
DR DR	WPI; 2001-476112/51. N-PSDB; AAH23392.

	329	330	οy
	735	676 KRRQQKIRKYTMRRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVY	Дb
	329	330	Qy
	675	616 FPDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIISAVVGILLVVVLGVVFGILI	D <sub>P</sub>
	329	330	Qy
• •	615	556 NARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPECVARCPSGVKPDLSYMPIWK	В
	329	330	Qy
	555	496 TANRPEDECYGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECYEECRYLQGLPREYY	Ð
	329	330	Qy
	495	436 LHNGAYSLTLQGLGISWLGLRSLRELGSGLALIHHNTHLCFVHTVPWDQLFRNPHQALLH	Дb
	329	330	Qy
	435 .	376 FLPESFDGDPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRI	g
	329	330	δ
	375	316 PLHNQEVTAEDGTQRCEKCSKPCARVCYGLGMEHLREVRAVTSANIQEFAGCKKIEGSLA	В
	329	330	Qy
:	315		Đ
	329	275 LHENHSGICELHCPALVTYNTDTEESMPNPEGRYTFGASCVTACPYNYLSTDVGS	Qy
	274 255	215 SPMCKGSRCWGESSEDCQSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLAC	Db Qy
	195	w	Db .
	214	155 GLRELQLRSLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPC	Ş
	154 135	95 DIQEVQGYVLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPG 	рb
	94 75	35 LARGAASTQYCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQ 	g. Q
	ps 1;	Query Match 64.3%; Score 2405.5; DB 22; Length 1255; Best Local Similarity 41.1%; Pred. No. 3.5e-142; Matches 509; Conservative 0; Mismatches 3; Indels 727; Ga	Qui Bes Ma
		Sequence 1255 AA;	SQ
•	to tare in lancies in are are varian,	e antigen-presenting or preventing malign Specifically, these .g. breast cancer, ov t sequence represents p185 or c-erbB2).	3888888
	Ce	e invention provides an isolated antigen-presenting cell, whic presses at least an immunogenic portion of a polypeptide that	888
	٠	2; Page 41-46; 49pp; English.	Y P XX
•	eful	New antigen-presenting cells, useful as vaccines for eliciting or enhancing an immune response to HER-2/neu protein, particularly use for treating or preventing cancer, e.g. breast cancer	Tra Tra XX

٠				
		≱-	1216	В
		AFDNLYYWDQDPPERGAPPSTFKGTPTAÈNPEYLGLDVP 546	508	Qy
	1215	PLPAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP	1156	Db
	507	PLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSP	448	Qy
	1155	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG	1096	Db
	447	KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG	388	Qy
	1095	APGAGGMVHHRHRSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA	1036	Db
	387	GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAA	330	Qy
	1035	FSRMARDPQREVVIQNEDLGPASPLDSTFYRSLLEDDDMGDLVDAEEYLVPQQGFFCPDP	976	DЬ
	329		330	Qy
	975	MTFGAKPYDGIPAREIPDLLEKGERLPQPPICTIDVYMIMVKCWMIDSECRPRERELVSE	916	Db
•	329		330	Qy
	915	PNHVKITDFGLARLLDIDETEYHADGGKVPIKWMALESILRRRFTHQSDVWSYGVTVWEL 915	856	рь
•	329		330	Qy
	. 855	LVTQLMPYGCLLDHVRENRGRLGSQDLLNWCMQIAKGMSYLEDVRLVHRDLAARNVLVKS	796	dd Db
	329		330	Qy
	795	KGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGSPYVSRLLGICLTSTVQ	736	Db

Search completed: April 28, 2003, 13:39:43 Job time : 72.3846 secs

THIS PAGE BLANK (USPTO)

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
   145.5
138
137.5
135.5
135.5
134.5
134.5
134.5
134.5
134.5
134.5
134.1
132.5
132.5
131.5
132.5
131.5
132.5
131.5
132.5
131.5
132.5
131.5
132.5
133.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
134.5
13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-821-883-25
1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           283224 seqs, 96134422 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     April 28, 2003, 13:38:09; Search time 7.98328 Seconds
   GAGGMVHHRHRSSSTRSGGG.....STFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
   1255
1256
1260
13210
13210
698
707
1223
399
553
379
379
379
379
379
322
322
322
3443
322
323
3443
323
3443
323
3443
323
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3443
3444
3443
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3444
3
                           GQHUE
A47302
A46302
A46302
TVFVLV
TVCHLV
PIHUB6
S0673
S31719
P19293
T09293
T09293
S25299
S250752
S50752
S50755
T03454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A24571
I48161
TVRTNU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (without alignments)
2613.108 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       283224
                     extensin precursor call wall glycopro hypothetical prote salivary proline-r hypothetical prote wiskett-aldrich sy prpiz protein - hu BPLF1 protein - hu BPLF1 protein - protein - huma ALR protein - huma ALR protein - huma ALR protein - huma ALR protein - huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein-tyrosine k
p-185 precursor -
protein tyrosine k
epidermal growth f
epidermal growth f
pTB-associated spl
protein-tyrosine k
epidermal growth f
salivary proline-ric
probable dihydroli
hydroxyproline-rich
protein-rich prote
                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical prote probable serine/th
                                                                                                                                                                                                                                                                                                                                                                                                                  epidermal growth f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
homolog
                                                                                                                                                                                                                                                                                                                      ٠. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 1
```

Result No.

Minimum DB Maximum DB

Searched:

Database

Sequence:

Run on:

120 10.2 318 2	120.5 10.2 449 2	0,	10.2		10.3	10.3	10.3			10.4	10.4		10.5 .	10.5	125 10.6 1460 1
T29479	S16748	T33663	T21314	T31611	T29265	QQBE24	C29356	JQ2220	A41870	T13049	T14355	TVHUGL	S57447	EDBE11	EDBEIF ·
hypothetical prote	proline-rich prote	hypothetical prote	hypothetical prote	hypothetical prote	hypothetical prote	nuclear antigen EB	hydroxyproline-ric	hydroxyproline-ric	dnaA protein - Str	eyelid - fruit fly	protein-tyrosine-p	transforming prote	HPBRII-7 protein -	immediate-early pr	immediate-early pr

## ALIGNMENTS

```
A;Gene: neu
C;Superfamily: e
C;Keywords: ATP
F;718-983/Domain
                                                                                                                                                                                                                                                                                Gene 140, 251-255, 1994
A;Title: Cloning and activation of the Syrian hamster neu A;Reference number: 148161; MUID:94193007; PMID:7908275
                                                                                                                                                                                                                                                                                                                                                                   p-185 precursor - golden hamster
C;Species: Mesocricetus auratus (golden hamster)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 18-Jun-1999
C;Accession: I48161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F;22-637/Domain: EXTracellular status predicted <EXTS
F;70-304/Domain: EGF receptor extracellular domain repeat <EE1>
F;30-605/Domain: EGF receptor extracellular domain repeat <EE2>
F;39-605/Domain: transmembrane status predicted <TMMS
F;654-675/Domain: intracellular status predicted <TMMS
F;676-1255/Domain: intracellular status predicted <TMMS
F;718-983/Domain: protein kinase homology <KINS
F;726-734/Region: protein kinase ATP-binding motif
F;68,124,187,259,530,571,629/Binding site: carbohydrate (Asn) (covalent) status
F;686/Binding site: phosphate (Thr) (covalent) (by protein kinase C) status pred
F;784/Binding site: phosphate (Thr) (covalent) (by protein kinase C)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Map position: 17q21.1-17q21.1

A;Introns: 25/1; 75/3; 147/1; 883/3

A;Note: the list of introns is incomplete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:M16792; NID:g183983; PIDN:AAA58637.1; PID:g553332 C;Comment: Amplification and overexpression of this erbB-related gene occurs C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Description: catalyzes the phosphorylation of a peptidyl tyrosine residue C;Superfamily: epidermal growth factor receptor; protein kinase homology C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprot
                                                                                                                                                                              C; Genetics:
                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-1254 < RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;1-21/Domain: signal sequence #status predicted <SIG>
F;2-1255/Product: protein-tyrosine kinase erbB2 #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene: GDB:ERBB2; NGL; NEU; HER-2
A;Cross-references: GDB:120613; OM
                                                                                                                                                                                                 A; Cross-references:
                                                                                                                                                                                                                                                        A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                              A; Accession: I48161
                                                                                                                                                                                                                                                                                                                                                         R;Nakamura,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :1139,1221,1222,1248/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation)
      Matches
                      Query Match
Best Local :
                                                                               726-734/Region:
                                                                                                 718-983/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              686/Binding site: phosphate (Thr) (cove
753/Active site: Lys #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                       Ŧ.;
                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                      epidermal growth factor receptor;
                                                                                                                                                                                                                                                                                                                                                     Ushijima, T.; Ishizaka, Y.; Nagao, M.; Arai, M.; Yamazaki,
                                                                           protein
protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                 1994
                                                                                                                                                                                               GB:D16295; NID:g493236; PIDN:BAA03801.1;
                                                                             kinase
kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        L20613; OMIM:164870
                    81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99.6%;
                                                                         homology <KI
ATP-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1177; DB 1;
Pred. No. 1.4e-69;
                    Score 966.5;
Pred. No. 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                 <KIN>
                                                                           motif
3.1e-56;
nes 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                      DB
                                                                                                                                      protein
                                    `
!:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1255;
                                    Length
  Indels
                                                                                                                                      kinase homology
                                                                                                                                                                                                                                                                                                              proto-oncogene
                                                                                                                                                                                               PID:g747595
                                        1254;
  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  phosphoprotein; phospho
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     уd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atus predic
predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               about
Ş
                                      В
                                                                       δÃ
                                                                                                                 망
                                                                                                                                                    Qy
                                                                                                                                                                                             В
                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R; Bargmann, C.I.; Hung, M
Nature 319, 226-230, 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary
                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genetics:
                                        1163
                                                                                                                   1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1098
                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
  181
                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Н
                                                                                                                 LQSLSPHDLSPLQRYSEDPTLPLPPETDGYVAPLACSPQPEYVNQSEVQPQPPLTPEGPL
                                                            PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                      PPVRPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLVPREGTASPPHPSPAFSPAF
                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                            Conservative
```

217

1222

```
C;Superfamily: epidermal growth factor receptor; protein kinase homology C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprote F;1-19/Domain: signal sequence #status predicted <SIG>
F;20-1260/Product: protein tyrosine kinase neu #status predicted <MAT>
F;658-680/Domain: transmembrane #status predicted <TMN>
F;723-980/Domain: protein kinase homology <KIN>
F;731-739/Region: protein kinase homology <KIN>
F;731-739/Region: protein kinase ATP-binding motif F;71,191,263,535,576,634/Binding site: carbohydrate (Asn) (covalent) #status F;580/Active site: phosphate (Thr) (covalent) #status predicted F;758/Active site: Lys #status predicted F;758/Active site: Lys #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: mRNA
A;Residues: 1-1260 <BAR>
A;Residues: 1-1260 <BAR>
A;Coss-references: EMBL:X03362; NID:g56745; PIDN:CAA27059.1; PID:g56746
R;Masul, T.; Mann, A.M.; Macatee, T.L.; Garland, E.M.; Okamura, T.; Smith
Carcinogenesis 12, 1975-1978, 1991
A;Title: Direct DNA sequencing of the rat neu oncogene transmembrane dome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein-tyrosine kinase (EC 2.7.1.112) neu precursor - C:Specles: Rattus norvegicus (Norway rat) C:Date: 31-Dec-1988 #sequence_revision 31-Dec-1988 #tex C:Accession: A24562; A61204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 637-663, 'V', 665-702 <MAS>
A; Note: authors translated the codon GCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2-thiazolyl]formamide or N-methyl-N-nitrosourea. A;Reference number: A61204; MUID:92035293; PMID:1682063 A;Accession: A61204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: The neu oncogene encodes an epidermal growth factor A;Reference number: A24562; MUID:86118662; PMID:3945311 A;Accession: A24562
                                                                                                              1043 GTGSTAHRRHRSSSTRSGGGELTLGLEPSEEGPPRSPLAPSEGAGSDVFDGDLAMGVTKG 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1038 GAGSTAHRRHRSSSTRSGGGELTLGMEPSGEEPPRSPLAPSEGAGSDVFEGELGMGATKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYYNQPDVRPQPPSPREGPL 120
                                                                                                                                         GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNLYYWDQDPSERGSPPNTFEGTPTAENPEYLGLDVP 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGMYHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PPVRPAGATLERPKTLSPGKNGVVKDVFTFGGAVENPEYLVPRGGSASQPH-PPALCPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , M.C.; Weinberg,
                                                                                                                                                                                                                                                    80.7%;
81.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of the rat neu oncogene transmembrane domain reveals n
                                                                                                                                                                                                                          Score 954; DB 1;
Pred. No. 5.4e-55;
8; Mismatches 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #text_change
                                                                                                                                                                                                                                                                               Length 1260;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Val
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          receptor-related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   phosphoprotein;
                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Smith,
                                                                                                                                                                                                                             Gaps
1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1097:
                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R.A.; Cohe
                                                                                                                                                                                                                                                                                                                                                                                                                               predicte
                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      phos
```

```
A;Molecule type: mRNA A;Molecule type: mRNA A;Molecule type: mRNA A;Residues: "RCAMRRA', 150-187, 'KSVIQAV',195,'M',197,'A',199-222,'S',224-304,'RA',307-321 ',798-799,'TD',802-811,'R',813-942 <XUV>
A;Experimental source: A431 human carcinoma cells, which have large numbers of EGF recep A;Lin, C.R.; Chen, W.S.; Kruiger, W.; Stolarsky, L.S.; Weber, W.; Evans, R.M.; Verma, I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:X06370; NID:g31118; PIDN:CAA29668.1; PID:g31119
R;Haley, J.D.; Waterfield, M.D.
J. Blol. Chem. 266, 1746-1753, 1991
A;Title: Contributory effects of de Novo transcription and premature transcript terminat A;Reference number: A38672; MUID:91107677; PMID:1988448
A;Accession: A38672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:M11234; NID:g181981; PIDN:AAA52370.1; PID:g553272 R;Haley, J.; Whittle, N.; Bennett, P.; Kinchington, D.; Ullrich, A.; Waterfield, Oncogene Res. 1, 375-396, 1987 A;Title: The human EGF receptor gene: structure of the 110 kb locus and identifi A;Reference number: S30024; MUID:88217333; PMID:3329716 A;Accession: S30024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Molecule type: mRNA
A;Residues: 1-1210 <ULL>
A;Residues: 1-1210 <ULL>
A;Cross-references: EMBL:X00588; NID:g31113; PIDN:CAA25240.1; PID:g757924
A;Note: the authors translated the codon AAG for residue 540 as Asn
R;Ishil, S.; Xu, Y.; Stratton, R.H.; Roe, B.A.; Merlino, G.T.; Pastan, I.
Proc. Natl. Acad. Sci. U.S.A. 82, 4920-4924, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Reference number: A00642; MUID:84245835; PMID:6330563
A;Accession: A00642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Date: 15-Nov-1984 #sequence_revision 27-Nov-1985 #text_change 11-Jun-1999
C;Accession: A00641; A25772; S30024; A38672; A00642; A43615; A23062; A05281; A60143;
R;Ullrich, A.; Coussens, L.; Hayflick, J.S.; Dull, T.J.; Gray, A.; Tam, A.W.; Lee, J
                            R; Weber, W.;
Science 224,
                                                                                       A; Molecule type: mRNA
A; Residues: 1028-1210 <SIM>
                                                                                                                                                                                                            Blochem. Blophys. Res.
                                                                                                                                                                                                               R;Simmen, F.A.; Gope, M.L.; Sci
Blochem. Blophys. Res. Commun.
                                                                                                                                                                                                                                                                                                       A; Molecule type:
A; Residues: 713-
                                                                                                                                                                                                                                                                                                                                                            A;Title: Expression cloning of human EGF receptor complementary DNA: gene A;Reference number: A43615; MUID:84196372; PMID:6326261 A;Accession: A43615
                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Lin, C.R.; Chen, W.S
Science 224, 843-848,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:M38425; NID:g181977; PIDN:AAA63171.1; PII
A;Experimental source: carcinoma cell line A431-7
R;Xu, Y; Ishil, S; Clark, A.J.L.; Sullivan, M.; Wilson, R.K.;
Nature 309, 806-810, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-29 <HA2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: Characterization and sequence of the promoter region of A;Reference number: A25772; MUID:85270438; PMID:2991899 A;Accession: A25772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: A00641; A; Accession: A00641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Title: Human epidermai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                   A; Accession: A23062
                                                                                                                                                                               A; Reference number: A23062;
                                                                                                                                                                                                                                                                       A; Experimental source:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 1-29 <HAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: DNA
A;Residues: 1-29 <ISH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Status: translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature 309, 418-425, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N;Contains:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Species: Homo sapiens (man)
                            W.; Gill, G.N.;
224, 294-297, 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rowth factor receptor precursor - human protein-tyrosine kinase (EC 2.7.1.112)
                                                                                                                                                                                                                                                                                                       713-964 <LIN>
                                                                                                                                                                                                                                                                                                                                mRNA
                                  1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1984
                                                                                                                                                                                                                                     epidermoid carcinoma cell line A431
M.L.; Schulz, T.Z.; Wright, D.A.; Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      growth factor receptor cDNA sequence and
41; MUID:84219729; PMID:6328312
                                                        Speiss,
                                                                                                                                                                            Schulz, T.Z.; Wi
un. 124, 125-132,
MUID:85046483; [
MUID:84172183;
                                                           9
PMID: 6324343
                                                                                                                                                                            PMID:6093780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              erbB
                                                                                                                                                                                                                                           Carpenter,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PID:g553271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ma, D.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aberrant expression
                                                                                                                                                                                                                                           ດ
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to a variety
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and identification
                                                                                                                                                                                                                                        O'Malley,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Roe,
                                                                                                                                                                                                                                                                                                                                                                                                                        amplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       epidermal gro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B.A.; Mer
                                                                                                                                                                                                                                           B. W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RNAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
```

```
C;Geneti
A;Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cell 59, 33-43, 1989
A;Title: Functional independence of the epidermal growth A;Reference number: A33331; MUID:90003233; PMID:2790960
A;Contents: annotation; internalization signal C;Comment: Binding of EGF to the receptor leads to intern
                                                                                                epidermal growth factor receptor,
C;Species: Homo sapiens (man)
C;Date: 22-Sep-1993 #sequence revi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;390-600/Domain: EGF receptor extracetitutat uomain: transmembrane #status predicted <TMM>
F;646-668/Domain: transmembrane #status predicted <TMM>
F;669-1210/Domain: intracellular #status predicted <INT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: ATP-stimulated interaction between epidermal growth factor receptor an A;Reference number: A38023; MUID:84191554; PMID:6325948 A;Reference number: receptor activity; PMID:6325948 A;Rontents annotation; receptor activity; PMID:6325948 A;Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded R;Chen, W.S.; Lazar, C.S.; Lund, K.A.; Welsh, J.B.; Chang, C.P.; Walton, G.M.;
                R;Plowman, G.D.; Culouscou, J.M.; Whitney, G.S.; Green, J. Proc. Natl. Acad. Sci. U.S.A. 90, 1746-1750, 1993
A;Title: Ligand-specific activation of HER4/p180erbB4, a
                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F;1047-1210/Region: inhibitory
F;128,175,352,413,444,528,603/Binding site:
F;745/Active site: Lys #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F;710-975/Domain: protein kinase homology <KIN>
F;718-726/Region: protein kinase ATP-binding motif
F;999-1046/Region: coated-pit mediated internalization signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Keywords: ATP; autophosphorylation; duplication; glyco
F;1-24/Domain: signal sequence #status predicted <SIG>
F;25-1210/product: EGF receptor #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GDB:120610;
A;Map position: 7p12.3-7p12.1
C;Superfamily: epidermal growth
                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nature 309, .270-273,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R; Mroczkowski, B.; Mosig, G.; Cohen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: protein
A; Residues: 740-744, 'X', 746-747 < RUS>
A;Reference number:
                                                                                                                                                                                                    RESULT
                                                                                       Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-645/Domain: extracellular #status predicted <EXT>
75-300/Domain: EGF receptor extracellular domain repeat 
390-600/Domain: EGF receptor extracellular domain repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Molecule type:
Residues: 25-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genetics
                                                                                                                                                                                                                                                                          1177
                                                                                                                                                                                                                                                                                                                                                               1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1025
                                                                                                                                                                                                                                                                                                                   191
                                                                                                                                                                                                                                                                                                                                                                                                        147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GDB: EGFR
                                                                                                                                                                                                                                                                                                                                                               --PHSTAVGNPEYLNTVQ------PTCVNSTFDSPAHWAQKGSHQISLDNPDYQQDF 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSPSTSRTPLLSSLSATSN--NSTVACIDRNGLQSCPIKEDSFLQRYSSDPTGALTEDSI 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSET-
                                                                                                                                                                                                                                                                                                                   -PERGAPPSTFKGTPTAENPEYL
                                                                                                                                                                                                                                                                                                                                                                                                        VFAFGGAVENPEYL-TPQGGAAPQPHPPPAFSPAFDNLYYWDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKD 146
                                                                                                                                                                                                                                                                          FPKEAKPNGIFKGS-TAENAEYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                    DDTFL-----PVPEYINQ-SVPKRPAGSVQNPVYHNQPLNP---
                                                                                       A47253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                            #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              growth factor receptor; protein kinase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OMIM:131550
                                                                                                                                                         HER4
                                                                                                                                                                                                                                                                        1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 164; DB 1;
Pred. No. 0.0026;
4; Mismatches 69
                                                                                                            18-Nov-1994 #text_change 18-Jun-1999
                                                                                                                                                           - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    leads to internalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  carbohydrate
                                                               Green, J.M.; Carlton,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Asn) (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   factor
                       fourth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AEE1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <EE2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                  -APSRDPHYQD 1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     factor receptor and
                                                                                                                                                                                                                                                                                                                                                                                                          -DP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    site
                         member
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   receptor from a domai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             phosphoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of the epidermal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                       of the
                                                                  ଜ.₩.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                          190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGF:recepto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11;
                       epiderm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
Der,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        supe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             phos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                o
```

```
A;Accession: A47253
A;Status; preliminary; not compared with conceptual translation
A;Rolecule type: nucleic acid
A;Residues: 1-1308 <PLO>
A;Residues: 1-1308 <PLO>
A;Cross-references: GB:LO7868; NID:g337359; PIDN:AAB59446.1; PID:g337360
A;Cross-references: GB:LO7868; NID:B337359; PIDN:AAB59446.1; PID:g337360
A;Note: sequence extracted from NCBI backbone (NCBIP:126842)
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; growth factor receptor
F;716-981/Domain: protein kinase homology <KIN>
F;716-981/Domain: protein kinase ATP-binding motif
                                                                                                  A; Map position: 4q-4q
C; Superfamily: unassigned ribonucleoprotein repeat-containing C; Keywords: alternative splicing; pre-mRNA splicing; surface E; 298-359/Domain: ribonucleoprotein repeat homology <RRM1>
F; 372-438/Domain: ribonucleoprotein repeat homology <RRM2>
                                                                                                                                                                                                                                                                                                                                                                                                        R;Gower, H.J.; Moore, S.E.; Dickson, G.; Elsom, V.L.; Nayak, R.; Development 105, 723-731, 1989
A;Title: Cloning and characterization of a myoblast cell surface A; Reference number: A43557; MUID:90091812; PMID:2480877
A;Accession: A43557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C:Species: Homo sapiens (man)
C:Date: 21-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 24-Sep-1999
C:Accession: A46302; A43557; S29995
R:Patton, J.G.; Porro, E.B.; Galceran, J.; Tempst, P.; Nadal-Ginard, B. Genes Dev. 7, 393-406, 1993
                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 312-707 <GOW>
A; Cross-references: GB:X16850;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: EMBL:X70944; NID:g38457; PIDN:CAA50283.1; PID:g38458
A;Note: sequence extracted from NCBI backbone (NCBIP:127206)
R;Gover, H.J.; Moore, S.E.; Dickson, G.; Elsom, V.L.; Nayak, R.; Walsh,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-707 <PAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Title: Cloning and characterization of PSF, a novel pre-mRNA splicing A; Reference number: A46302; MUID:93194059; PMID:8449401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PTB-associated splicing factor, long form - human N;Alternate names: myoblast cell surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                              A; Cross-references:
                                                                                                                                                                                                                                                          A; Gene: GDB:SFPQ; PSF
                                                                                                                                                                                                                                                                                    C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                              A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: A46302
     Matches
                         Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1270 QNGRIRPIVAENPEYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16 RSGGGDLTLGLE-PSEEEAPRSPLAP-SEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RYSEDPTVPLPS-----ETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPA 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RDGGFAAEQGVSVPYRAPTSTIPEAPVAQGATAEIFDDSCCNGTLRKPVAPHVQEDSSTQ 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NTFANTLGKAEYLKNNILSMPEKAKKAFDNPDYWNHSLPPRSTLQHPDYLQEYSTKYFYK 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RYSADPTVFAPERSPRGELDEEGYMTPMRDKPKQEYLNPVE-----ENPFVSRR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----PPKAEDEYVNEPLYL 1209
  Similarity
58; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AENPEYL
                                                                                                                                                                                                                                GDB:138275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----FSPAFDNLYYWDQDPPERGA--PPSTFKGTPT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13.3%;
                         12.3%;
                                                                                                                                                                                                                                                                                                         NID: g23711;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23;
Score 145.5; DB Pred. No. 0.024; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 157; DB 2;
Pred. No. 0.0082;
3; Mismatches 7!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              antigen 24.1D5; polypyrimidine tract-binding p
                                                                                                                                                                                                                                                                                                         PIDN:CAA34747.1;
                                                   BB
82;
                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1308;
                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                      PID: g23712
                                                                                                                                                   antigen
                                                   707;
                                                                                                                                                                          proteins;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96;
  65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         antigen defined
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Walsh, F.S
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 175
                                                                                                                                                                             ribonucleoprote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     factor
10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            λq
```

```
A;Gene: gag-env-erbB
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; oncogene; phosphotransferase; transforming protein; tyrc
F;1-6/Product: gag protein (fragment) #status predicted <GAG>
F;7-59/Product: env protein (fragment) #status predicted <ENV>
F;60-698/Product: protein tryrosine kinase erbB #status predicted <ERB>
F;194-459/Domain: protein kinase homology <KIN>
F;202-210/Region: protein kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
TVFVLV
밁
                                        Ş
                                                                                           밁
                                                                                                                                 Qy
                                                                                                                                                                                   밁
                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Comment:
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: GB:M10066; GB:M13881; NID:g211749; PIDN:AAA48763.1; PID:g211750 A;Note: in Genbank entry CHKERBBF, release 109.0, the source is designated as Gallu: C;Comment: This protein is synthesized as a gag-env-erbB protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-698 <NIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Title: c-erbB activation in ALV-induced erythroblastosis: A;Reference number: A00643; MUID:85228222; PMID:2988784 A;Accession: B00643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Nilsen, T.W.; Maroney, P.A.; Goodwin, R.G.; Rottman, Cell 41, 719-726, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 11-Jun-1999
C;Accession: B00643; A00643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein-tyrosine kinase (EC 2.7.1.112) erbB - avid
N;Contains: amino end of gag protein; env protein
C;Species: avian leukosis virus, ALV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                               229/Active site: Lys #status predicted
                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                        148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151
                                                                                           598
                                                                                                                                                                                                                                                                                 515 RTPLLSSLSATSNNSATNCID------RNGQGHPVREDSFVQRYSSDPTGNFLEESID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118
                                                                                                                                                                                                                                 88 DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDV 147
                                                                                                                                                                                                                                                                                                                         35 RSPL----APSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSET--
                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 GGGGGFHRR-
QINLDNPDYQQDFLPNETKPNGLLKVPAAENPEYLRVAAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PHPPPAFSPAFDNLYYWDQDPPERGAPPST--FKGTPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KPVVAQGPGPAPGVGSAPPASSSAPPATPPTSGA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GРКРРТРРРРРИОООООРРРООРРРООРРИОРР--РИРОРИОООО
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOSLPTHDPSPLORYSE-DPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPRE--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                        SLTAISKLPMDSRYQNSHSTAVDNPEYL-----NTNQSPLAKTVFESSPYWIQSGNH
                                                                                                                                                                                      DGFL-----PAPEYVNQ--LMPKKPS
                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -GPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQ 169
                                             -- RGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                  --AFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQ---- 188
                                                                                                                                                                                                                                                                                                                                                                                               24.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                       11.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -PP--GAPPPTPPSSGVPT
                                                                                                                                                                                                                                                                                                                                                                       25;
                                                                                                                                                                                                                                                                                                                                                                         Score 138; DB
Pred. No. 0.07
25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
.073;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                avian leukosis virus
tein fragment; protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -SPPPGMGLNQNRGPMGPGPGQS
                                                                                                                                                                                                                                                                                                                                                                            59;
                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F.M.; Crittenden, L.B.;
                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                 TAMVQNQIYNNI 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein; tyrosine-specifi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            novel RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein-tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PPGSGPGPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PPPPQDSS 107
                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          processing
                                                                                           649
                                                                                                                                                                                                                                                                                                                              87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Raines
```

and

epidermal growth factor receptor pre N;Contains: protein-tyrosine kinase C;Species: Gallus gallus (chicken) C;Date: 28-Feb-1986 #sequence\_revisi

#sequence\_revision

05-May-1995 #text\_change

04-Feb-2000

factor receptor precursor - chicke ein-tyrosine kinase (EC 2.7.1.112)

chicken

erbB

TVCHLV

```
salivary proline-rich phosphoprotein precursor PRB1 (large allele) [validated] N;Contains: peptide IB-1; peptide P-E (peptide IB-9); peptide P-F; peptide P-H C;Speciles: Homo sapiens (man) C;Date: 04-Dec-1986 #sequence_revision 12-Apr-1996 #text_change 08-Dec-2000 C;Accession: B40750; C40750; A40750; C25372; S02128; S02127; A03293; A90502; A:R;Azen, E.A.; Latreille, P.; Niece, R.L. R;Azen, E.A.; Latreille, P.; Niece, R.L. Am. J. Hum. Genet. 53, 264-278, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOL. Cell. B101. B. 1570 1770, TO 1871 (EGF) receptor: A; Title: Chicken epidermal growth factor (EGF) receptor: A; Reference number: A27720; MUID:88261272; PMID:3260329
                                                                                   A;Title: PRBI gene variants coding for length and null polymorphisms A;Reference number: A40750; MUID:93304421; PMID:8317492
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F;719-984/Domain: protein kinase homology KIN>
F;719-984/Domain: protein kinase homology KIN>
F;727-735/Region: protein kinase ATP-binding motif
F;136,202,380,361,370,422,575,580,615,635/Binding site: carbohydrate (Thr)
F;192,650/Binding site: carbohydrate (Ser) (covalent) #status predicted
F;687/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status
F;754/Active site: Lys #status predicted
F;1100,1183,1208/Binding site: phosphate (Tyr) (covalent) (by autophosphory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 585-1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Title: c-erbB activation in ALV-induced A;Reference number: A00643; MUID:85228222; A;Accession: A00643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cell 41, 719-726, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: mRNA
A; Residues: 1-1223 <LAX>
A; Cross-references: GB:M20386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F;655-677/Domain: transmembrane #status predicted <TMN>F;678-1223/Domain: intracellular #status predicted <INT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Gene: erbB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Cross-references: GB:M10066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R; Nilsen, T.W.; Maroney, P.A.;
                                          A; Molecule type:
                                                                 A; Accession: B40750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pecific protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;Superfamily: epidermal growth far. Keywords: alternative splicing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1-30/Domain: signal
                                                                                                                                                                                                                                                                                                                                                                           1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1040
                                                                                                                                                                                                                                                                                                                                                                                                                   189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              I.; Johnson, A.; Howk, R.; Sap,
ell. Biol. 8, 1970-1978, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35
                                                                                                                                                                                                                                                                                                                                                                        QINLDNPDYQQDFLPNETKPNGLLKVPAAENPEYLRVAAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RTPLLSSLSATSNNSATNCID------RNGQGHPVREDSFVQRYSSDPTGNFLEESID 1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RSPL----APSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSET---
                                                                                                                                                                                                                                                                                                                                                                                                                      ----DPPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DGFL-----PAPEYVNQ--LMPKKPS---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLTAISKLPMDSRYQNSHSTAVDNPEYL
                      35-392 <AZE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 epidermal growth factor receptor; protein kinase homology ternative splicing; ATP; autophosphorylation; glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 kinase
                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----AFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A00643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VIIV>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence #status predicted
                                                                                                                                                                                                                                                                                                                                                                                               -RGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11.7%;
24.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Goodwin, R.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 138; DB Pred. No. 0.13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ٦
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Tyr) (covalent) (by autophosphorylation)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   erythroblastosis:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bellot,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rottman, F.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59:
                                                                                                                                                                                                                                                                                                                                                                                                                 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F.; Winkler, M.; Ullrich,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA cloning,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -TAMVQNQIYNNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Crittenden,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #status predicted
                                                                                                          among
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 processing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            L.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   growth
                                                                                                            human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (covalent)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Α.
                                                                                                                                                                           A91974;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Raines,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                            saliva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     factor
                                                                                                                                                                                                                                                              human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Vennst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #sta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
A;Molecule type: protein
A;Residues: 92-127, 'R', 129-148, 'R', 150-152 <KA3>
R;Issmura, S; Saitoh, E; Sanada, K.
J. Biochem. 91, 2067-2075, 1982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Experimental sour A; Accession: C40750 A; Molecule type: DN
                                                                                                          A;Reference number:
A;Contents: IB-9
                                                                                                                                                                                                                                                                                                                              A; Reference number: A; Accession: A05261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: A40750
                                                                                 A; Accession: A90464
                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: A91974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Contents: P-H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type:
```

```
A; Molecule type: DNA
A; Molecule type: DNA
A; Résidues: 35-39, 'p',41-84,'G',86,'R',87-154,'R',218-246;300-306,'T',
A; Récession: A05262
A; Molecule type: DNA
A; Residues: 'N',57-59,'A',61-69;334-336,'S',338-339,'R',341-392 <AZ5>
R; Kauffman, D.; Wong, R.; Bennick, A.; Keller, P.
Biochemistry 21, 6558-6562, 1982
A; Title: Basic proline-rich proteins from human parotid saliva: complease approach to the proteins of the proteins of the proteins from human parotid saliva: complease approach to the proteins of the proteins from human parotid saliva: complease approach to the proteins of the proteins of the proteins from human parotid saliva: complease approach to the proteins of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Residues: 1-183,245-392 <MAE>
A;Residues: 1-183,245-392 <MAE>
A;Cross references: GB:K03204; NID:g190485; PIDN:AAA60185.1; PID:g190486
A;Note: alternatively splice forms lacking portions of the repeat region
R;Lyons, K.M.; Stein, J.H.; Smithles, O.
Genetics 120, 267-278, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R:Kauffman, D.; Hofmann, T.; Bennick, Biochemistry 25, 2387-2392, 1986
A:Title: Basic proline-rich proteins A;Reference number: A90502; MUID:8624
A:Accession: A03293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: S02127
A; Status: translation not shown
A; Molecule type: DNA
A; Residues: 35-183, 245-392 <LY2>
A; Cross references: EMBL: X07516
B; Kreifferences: EMBL: X07516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 35-127,250-273,'R',275-277,'R',279-336,'S',338-392
A;Cross-references: EMBL:X07517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J. Biochem. 94, 1991-1999, 1983
A;Title: Further fractionation of basic proline-rich peptides
A;Reference number: A91974; MUID:84161824; PMID:6671974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Title: Length polymorphisms in human proline-rich protein genes A;Reference number: S02127; MUID:89121440; PMID:2851479 A;Accession: S02128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: Differential RNA splicing and post-translational cleavages A;Reference number: A92492; MUID:85289325; PMID:2993301 A;Accession: C25372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Experimental source: subject C.J. (medium allele)
A;Note: authors translated the codon CAA for residue
R;Maeda N.; Kim, H.S.; Azen, E.A.; Smithles, O.
J. Biol. Chem. 260, 11123-11130, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                              R.Azen, E.; Lyons, K.M.; McGonigal, T.; Barrett, N.L.; Proc. Natl. Acad. Sci. U.S.A. 81, 5561-5565, 1984 A; Reference number: A94005; MUID:84298176; PMID:6089212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
A; Residues: 'S', 338-392 <SAI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: protein
A; Residues: 275-336, 'S', 338-392 <KAU>
R; Saitoh, E.; Isemura, S.; Sanada, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:S62928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Experimental source: subject M.V.O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Residues: 35-127,'R',129-148,'R',150-151,153-187,'K',189-272,'S',274-336,'S',338-39
A;Cross-references: GB:S62929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Experimental source: subject C.J. (large allele)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35-183, 245-270, 'Q', 272-392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     proteins from human parotid MUID:86243355; PMID:3521730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Α..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (large
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <AZ 3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Keller,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           allele)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <KA2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N.L.; Clements,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           saliva:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from
                                                                                complete covalent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               L.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         saliva,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 generated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                                                                                                             ,308-329,'C'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Maeda,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   were
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        parotid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               covalent
                                      ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 γd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     intrag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sali
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fo
```

:

```
A: Reference number: A70500; MUID: 98295987; PMI
A: Accession: H70786
A: Status: nucleic acid sequence not shown; tra
A: Molecule type: DNA
A: Molecule type: DNA
A: Residues: 1-553 <COL>
A: Cross references: GB: Z70283; GB: AL123456; NI
A: Experimental source: strain H37Rv
C: Genetics:
A: Genetics:
A: Genetics:
A: Genetics: SucB
C: Superfamily: Mycobacterium probable dihydrol
F: 4-77/Domain: lipoyl/biotin-binding homology
                                                                                                                                                                                                                                                                                                                                                                                                                                            Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; SACLLUII, C., Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; SACLLUII, C., Nature 393, 537-544, 1998

A:Ature 393, 537-544, 1998

A:Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; A:Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; A:Title: Deciphering the biology of Mycobacterium tuberculosis fi A:Reference number: A70500; MUID:98295987; PMID:9634230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: GDB:PRB1
A;Gene: GDB:PRB1
A;Cross-references: GDB:11951; OMIM:180989
A;Map position: 12p13.2-12p13.2
A;Map position: 12p13.2
A;Map pos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A:Title: Fractionation and characterization of basic A:Reference number: A91966; MUID:83007119; PMID:71188 A:Contents: P-E A:Accession: A91966 A:Accession: A91966 A:Molecule type: protein A:Residues: 92-127, 'R',129-148, 'R',150-152 <ISS>A:Residues: 92-127, 'R',129-148, 'R',150-152 <ISS>C:Comment: This peptide contains 21-residue repeats, C:Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           probable dihydrolipoamide acetyltransferase component [similarity] - C;Species: Mycobacterium tuberculosis C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 01-Se C;Accession: H70786 R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Ha R;Cole, S.T.; Brosch, R.; Deviin, K.; Feltwell, T.; Gentles, S.; Haml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
   Matches
                           Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24/Binding site: phosphate (Ser) (covalent) #status
                                                                                                                                                  /Binding site:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11 RSSSTRSGGGDLTLGLEPSEEEAPRSPLAP---SEG---AGSDVFDGDLGMGAAKGLQSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GPPPPPGKP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PHPPPAFSPAFDNLYYWDQDPPERGA-----PPSTFKGTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----PPPQGDKSQSPRSP-PGKPQG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KSRSPRSPPGK-PQGPPPQGGNQPQGPPPPPGKPQGPPPQGGNKPQGPPPPGKPQG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NKPQGPPPPGKPQGPPPQGDKSQSPRSPPGK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPREGPLPAARPAGATLERAKTLS----PGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQ 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPP------
                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                   site:
                                                                                                                                     Mycobacterium probable dihydrolipoamide succinyltransferase; lipoyl/biotin-binding homology <LPBl>
ite: lipoamide (Lys) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.6%;
                           11.5%;
25.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       characterization of basic proline-rich peptides; MUID:83007119; PMID:7118863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -QGPPQQGGNRPQGPPPPGKPQGPP
                                                                                                                (Lys)
Score 135.5;
Pred. No. 0.08
24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 137.5; DB Pred. No. 0.042;
                                                                                                                (covalent)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .; Garnier, T.; Churcher, C.; Harris, Feltwell, T.; Gentles, S.; Hamlin, N. S.; Seeger, K.; Skelton, S.; Squares,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----pppqggnqpqgppppgkpqgpppqgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20-Apr-2000 #text_change 01-Sep-2000
                                                                                                                                                                                                                                                                                                                                                                                                              translation not
                                                                                                                                                                                                                                                                                                                         NID: g3261561;
                           .083;
                                                                                                                   #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75;
75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 392;
                                                   Length 553;
Indels
                                                                                                                predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of which have
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POGPPPQGGNQPQ
                                                                                                                                                                                                                                                                                                                         PIDN:CAA94256
                                                                                                                                                                                                                                                                                                                                                                                                              shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   trom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71;
61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Barrell, B.G. rom the complete
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           internal
                                                                                                                                                                                                                                                                                                                         į.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B.G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                         PID:g1237068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                     lipoyl/biot
10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Holroyd,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pyrogluta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                experimer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sever
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
```

```
proline-rich protein - African clawed frog
() Species: Xenopus laevels (African clawed frog)
C) Species: Xenopus laevels (African clawed frog)
C; Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change
C; Accession: S31719
R, Nishinatsu, S.I.; Satoshi, X.Y.Z.; Oda, X.Y.Z.; Naoto, X.Y.Z.;
submitted to the EMBL Data Library, August 1992
A; Reference number: S31719
A; Reference number: S31719
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-379 <NIS>
                                                                                                                                                                                                                                                        RESULT
S31719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hydroxyproline-rich glycoprotein precursor - C;Species: Nicotiana tabacum (common tobacco) C;Date: 28-Feb-1990 #sequence_revision 28-Feb C;Accession: S06733 R;Keller, B; Lamb, C.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:X13885; NID:g19866; PIDN:CAA32090.1; C;Superfamily: hydroxyproline-rich glycoprotein C;Keywords: glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: I
A; Residues: 1-620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genes Dev. 3, 1639–1646, 1989

A; Title: Specific expression of a novel cell wall hydroxyproline-rich
A; Reference number: S06733; MUID:90128263; PMID:2612909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: S06733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                113
                                                                                                                                                                                                                                                                                                                                                    336 TYLPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                                                                                               210 EYLGL
                                                                                                                                                                                                                                                                                                                                                                                                                                            287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RHGHPPPPTYAQPPPTPTYSPSPQVQPPPTYSPPPPTHVQPTPSPPSRGHQPQPPTHRHA 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KPAPEPPPVQPTSGAPAGGDAKPVLMPELGESVTEGTVIRWLKKIGDSVQVDEPLVEVST 160 . . ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GPGHL----PSHGQRPPSPSHGHAPPSG-----GHTPPRG-QHPPSHRRPSPPS 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGDLTLGLEPSEEEAPRSPL---APSEGAGSDVFDGDLGMGAAKGLQSLPTH-DPSPLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                            PTYSPPPPSPIYSPPPPAYSPSPPTPTPTF----SPPPPAYSPPPTYSPPP----P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAAPQP-----HPPPAFSPA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PTHRHAPPTHQPSPLRHLPPSPRRQPQPPTYSPPPPAYAQ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLPAARPAGATLE-----RAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQ 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R-----YSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDV------RPQPPSPREG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAEQKKRAKAPAPAAQAAAAPAPKAPPAPALAHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FGGAVENPEYLTP - - QGGAAPQPHPPPAFSPAFDNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PTPKAEPAPSPPAAQPAGAAEGAPYVTPLVRKLASENNIDLAGVTGTGVGGRIRKQDVLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PSPREGPL - - - PAARPAGA - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DKVDTEIPSPVAGVLVSISADEDATVPVGGELARIGVAADIGAAPAPKPAPKP--VPEPA 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QSLPTHDPSPLQ-----RYSEDPTVPLPSETD--GYVAPLTCSPQPEYVNQPDVRPQP- 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EPSEEEAPRSPL -- APSEGAGSDVFDGDLGMGAAKG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <KEL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.4%; 26.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 135; DB Pred. No. 0.1; 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----FDNLYYWDQDPPERGAPPSTFKGTPTAENP 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-Feb-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---TLERAKTLSPGKNGVVK--DVFA 149:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tobacco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                             X.Y.Z.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPQPSPTYSPPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         620;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PID:g19867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-Jul-2000
                                                                                                                                         Ueno, X.Y.Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14;
```

EMBL: X68249; NID: g64955; PID: g64956

```
RESULT
T05264
                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references:
C;Superfamily: proli
                                              C; Date: 23-Apr-1999
C; Accession: T05264
                                                                             probable serine/threonine-specific protein kinase
C;Species: Arabidopsis thaliana (mouse-ear cress)
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E;ACCESSACE. D.; Stellyes, L.
R;JObnson, D.; Stellyes, L.
submitted to the EMBL Data Library, Novemb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                               R; Bevan, M.; Terryn,
                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMB:
2;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary; translated from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein C50F7.5 - Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Species: Caenorhabditis elegans
Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                H.W.; Mayer,
                                                                                                                                                                                                                                         117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  251
                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134
                                                                                                                                                                                                                                                                                                        66
                                                                                                                                                                                                                                                                                                                                    67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59
                                                                                                                                                                                                                                                                                                                                                                   31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Госат
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 AGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEG---AGSDVFDGDLGMGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CESP:C50F7.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RP--
 ç
                                                                                                                                                                            SVEPSED----
                                                                                                                                                                                                         AFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                   ----PVIASSADPILPTSVVPQPSNEPSPGTVAP---SDEPSPSGPPS---PGPVNPSEDP
                                                                                                                                                                                                                                                                                                                                                                  HHHHKTKAPRTSRGIATTTFAPTSSDL---PIAGSSSA-----
                                                                                                                                                                                                                                                                                                                                                                                                 HHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSP---
                                                                                                                                                                                                                                         QPSGPPSPGPVDPSEDPQP---
                                                                                                                                                                                                                                                                     LPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQP-----HPPP
                                                                                                                                                                                                                                                                                                                                 HDPSPLQRYSEDP-----TVPLPSE--TDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGP 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APQPHPPPAFSPAFDNLYYWDQDPPERGAPP 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RQPPTSLNGPPSPINEPAPELPQRHNSLHRKTAGPVR----GLAPPPPQSVHLSP-GGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SGGRPHDDSDSGSNRSSPPEVGRAHRPSLPDLSRPPSSTSSGMKHSSSAPPPPPPGRRQA 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -GAPPAPSQNAKPYNR--EKPLPPTPGHRAPAAPPVKPPPSPINSRSPSAHSQPPPPPPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 24.2
54; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---REGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPE--YLTPQGGA 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unassigned
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The sequence nber: Z20601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       proline-rich protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
              n, N.; Ardiles, W.; Buysshaert, C.; Dasseville, K.F.X.; Schueller, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL: U41557;
                                                              #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11.4%;
28.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              collagens
                                                                                                                                                                                                                                                                                                                                                                                                                                              11.3%;
                                                                                                                                                                          PQPSGPPSPGPVDP-SEDPQPSGSSSP 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                                                                                                                  25;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 134; DB 2
Pred. No. 0.055;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIDN: AAA83301.1; CESP:C50F7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 134.5; DB Pred. No. 0.064;
Database,
                                                                                                                                                                                                                                         -----SVEPSEDHQPSGPPSPGPVDPSEDPQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          November 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GB/EMBL/DDBJ
                                                           23-Apr-1999 #text_change 17-Mar-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cosmid
September 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C50F7
                                                                                            OEC
                                                                                                                                                                                                                                                                                                                                                                                                                                  74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                            2.7.1.-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                            T4L20.20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-Jan-2000
                               R.; De Clerck,
                                                                                                                                                                                                                                                                                                     116
                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58
                                                                                                                                                                                                                                                                                                                                                                   65
                                                                                           Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                             ...
..
                               рe
```

```
A; Molecule type: mRNA
A; Residues: 969-971, 'K', 973-1115, 'D'
A; Cross-references: EMBL: 212608
R; Helsermann, G.J.; G111, G.N.
J. B101. Chem. 263, 13152-13158, 1988
J. B101. Chem. 263, 13152-13158, 1988
A; Title: Epidermal growth factor research
                                                                                                                                                                                  submitted to the EMBL Data Library, A;Reference number: S24942 A;Accession: S24942
                                                                                                                                                                                                                                                                                                                                    Oncogene 6, 673-676, 1991

A;Title: Comparison of EGF receptor sequences as a guide A;Reference number: A43818; MUID:91232866; PMID:2030916
A;Accession: A43818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Luetteke, N.C. Genes Dev. 8, 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             epidermal growth factor receptor precursor - mouse C;Species: Mus musculus (house mouse) C;Decies: Mus musculus (house mouse) C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 18-Jun-1999 C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 18-Jun-1999 C;Accession: A53183; A43818; S24942; A28941; S45325; I49643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                       A; Reference number: A28941;
                                                                                                                                                                                                                                                                                                                                                                                                    R; Avivi, A.; Lax, I.; Ullrich, 
Oncogene 6, 673-676, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Introns: 180/1;
A; Note: T4L20.20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Cross-references: EMBL: AL023094
                                                                                                                                                                                                                                                     R;Eisinger, D.P.;
                                                                                                                                                                                                                                                                           A;Cross-references:
                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-714 <AVI>
                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:U03425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-1210 <LUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: A53183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: A53183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Title: The mouse waved-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Map position: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Experimental source: cultivar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Reference number:
A;Accession: T05264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Keywords:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15 SNGTPPSNGTSPSNESSPPTP--PSSPPPSSI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GYYKGTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --FKGTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQ-----GGAAPQPHPPP 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREG-----PLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHD--:---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QTPSNQSPERPTPPSPGAN---DDRNRTNGGNNNRDGSTPSPPSSGNRTSGDGGSPSPPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SISPPQNSGDSDSSSGLLLLLAVCICICCNRKKKKKSPQVNHMHYYNNN-PYGGAPSGNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAPPTQETSPPTSPSSS-----PPVVANPSP----QTPENPSPPAP-EGSTPVTPPAPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1-674 <BEV>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      phosphotransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 23.159; Conservative
protein
                                                                                                                                                                                                                                                     Serrero,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Phillips, H.K.; Qiu,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 221/1; 381/1; 421/1; 444/3; 470/2; 518/3;
                                                                                                                                                                                                                                                     GB:X59698
Serrero, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11.3%;
23.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                phenotype results from a point mutation; MUID:94170986; PMID:8125255
                                         MUID:88330814; PMID:3138233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Columbia; BAC clone T4L20
                                                                                 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 134; DB Pred. No. 0.13;
                                                                                                                                                                                                                                                                                                                                                                                                                      Schlessinger,
                                                                                                                                                                                                                                 June 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T.H.; Copeland, N.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----SPAFDNLYYWDQDPPERGAPPST-
                                                                                                                                                                                                                                                                                                                                                                                                                        J.; Givol,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 674;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                             serine residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SAPPPDISASFSPP
                                                                                                                                                                                                                                                                                                                                                                                to, study the ligand binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Earp,
                                                                                                                                                                                                                                                                                                                                                                                                                          Morse,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                H.S.; Jenkins,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              58
                                                           phosphorylate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    recepto
```

Z.A

```
Search completed: April 28, 2003, 13:42:33 Job time: 11.9833 secs
                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F;720-728/Region: protein kinase ATP-binding motif #status experimental F;680,695/Binding site: phosphate (Thr) (covalent) #status experimental F;697,1070,1071/Binding site: phosphate (Ser) (covalent) #status experimental F;993/Binding site: (or 997) phosphate (Ser) (covalent) #status experimental F;1028/Binding site: (or 1030 or 1032) phosphate (Ser) (covalent) #status experimental F;1197/Binding site: phosphate (Tyr) (covalent) #status experimental
                                                                                                                                           В
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Residues: 689-694,'X',696-704,'L',706-707;989-992,'XX',995-996,'X',998-1000;1002-1009
R;Hibbs, M.L.; Dunn, A.R.; Alexander, W.S.
submitted to the EMBL Data Library, April 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N; Reference number: S45325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;Molecule type: mRNA
;Residues: 12-20,22-132.<RES>
;Cross-references: GB:L06864; NID:g193001; PIDN:AAA53029.1; PID:g567201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     roc. Natl. Acad. Sci. U.S.A. 90, 55-59, 1993
[711le: Expression of the epidermal growth factor receptor gene is regulated in mouse; Reference number: I49643; MUID:93126380; PMID:7678348
[Accession: I49643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Molecule type: DNA
Molecule type: DNA
Residues: 1-971,'K',973-1210 <VER>
Residues: 1-971,'K',973-1210 <VER>
Cross-references: EMBL:X78987; NID:9488830; PIDN:CAA55587.1; PID:9488831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Superfamily: epidermal growth factor receptor; protein kinase homology Keywords: ATP; growth factor receptor; kinase-related transforming protein; phosphopr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gene: EGFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Status: preliminary
                                                                                                                                                                                                                                                                                   1118
                                                                                                                                                                                                                                                                                                                                                                                                                               1071
                                                                                                                                    1165 MSLDNPDYQQDFFPKETKPNGIFKG-PTAENAEYLRVAPP 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1011
                                                                                                                                                                                                                                                                                                                                                         135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47 DVFDGDLGMGAAKGLQSLPTHDPSP-------
                                                                                                                                                                                                                                                                                                                                                  TLSPGKNGVVKDVFAFGGAVENPEYL-TPQGGAAPQPHPPPAFSPAFDNLYYWDQ----- 188
                                                                                                                                                                                                                                                                                                                                                                                                                            SDPTGAVTEDNIDDAFL-----PVPEYVNQ-SVPKRPAGSVQNPVYHNQPLHP----- 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EDPTVPLPSET--DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAK 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DVVDADEYLIPQQGFFNSPSTSRTPLLSSLSATSNNSTVACINRNGSCRVKEDAFLQRYS 1070
                                                                                                                                                                                                                                                                            --APGRDLHYON--PHSNAVGNPEYLNTAQ------PTCLSSGFNSPALWIOKGSHQ 1164
                                                                                                                                                                                                          ----DP-----PERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ne EMBL Data Library, April 1994
The complete cDNA sequence of the Mouse Epidermal Growth Factor Receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11.3%; Score 134; DB 2; 26.4%; Pred. No. 0.24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            predicted <TMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----LQRYS 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    76; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11;
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to a score greater than or equal to the score of the result being and is derived by analysis of the total score distribution
                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length: 0
length: 2000000000
                                                                                                                                                                                                                                           Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     908470 seqs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              April 28, 2003, 13:37:08;
    100.0
100.0
100.0
100.0
100.0
100.0
100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-821-883-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A_Geneseq_101002:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGGMVHHRHRSSSTRSGGG...
                                                                                                                                                                                                                                                                                                                                                                                                                                     /SIDS2/gcgdata/geneseq/geneseqp-embl/AA199, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000, DAT:
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000, DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /SIDS2/gcgdata,
/SIDS2/gcgdata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1984.DAT:*
                                                                                                                                                                                                                                             Length
  217
397
555
564
690
697
1179
1223
1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*
                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                             IJ
AAE13121
AAE13122
AAE13110
AAE13110
AAE13111
AAE13111
AAE13111
AAE13111
AAE13123
AAU98923
AAU98923
AAE12130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /geneseq/geneseqp-embl/AA1986.DAT:*
/geneseq/geneseqp-embl/AA1987.DAT:*
                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .....STFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search time 17.4181 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (without alignments)
1660.081 Million cell updates/sec
                                                                                   Mature human HER-2
NY-ESO-IC-HER-2 me
Human HER500 fusio
Human HER500-hGM-C
Human HER500-rGM-C
                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                        to have
being pr
                                             Human
                                                                 Human
  tyrosine kin
                                           SART3-IC-HER
breast cance
                        heregulin
                                                                                                                                                                                                                                                                                                                                                                          printed
                                                                                                                                                                                                                                                                                                                                                                                                ρ
```

					_	_																												
164	164	164	648.5	711	864	954	954	961	961	961	961	961	1086	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1177	1182	1182
•	13.9	٠	٠	•	•	80.7	80.7	81.3	•	•	•	•	•	•	•	•	•			99.6	•		•			٠	•		٠	٠	•	99.6	100.0	100.0
1210	1210	1210	135	293	1200	1256	1256	1256	1256	1256	926	920	287	1433	1255	1255	1255	1255	1255	1255	1255	1255	1255	1255	919	919	600	589	587	583	266	266	1255	1255
22	21	21	21	21	21	23	21	23	22	21	23	23	19	14	23	23	23	23	22	22	21	21	20	17	23	21	23	23	23	23	23	21	23	22
AAB68420	AAY50616	AAB19259	AAB43787	AAB58875	AAB21208	AAM51144	AAB21199	AAM51151	AAG62860	AAB21206	AAM51153	AAM51152	AAW53133	AAR39568	AAU77114	AAM51143	AAE20479	AAE24067	AAG88267	AAB85458	AAY84780	AAB21198	AAW92406	AAW01111	AAM51148	AAB21203	AAE20482	AAE20484	AAE20481	AAE20483	AAM51146	AAB21201	AAU74545	AAB60167
Amino acid sequenc		Amino acid sequenc	Human cancer assoc	Breast and ovarian	Human HER-2/neu pr	Rat Her-2/neu onco	Rat HER-2/neu prot	Mouse Her-2/neu on	. Amino acid sequenc	Mouse Her-2/neu pr	Mouse Her-2/neu ex	Her-		nce of c-er			Human Her-2/neu pr	Human Her-2 protei		Human HER-2/neu pr	Amino acid sequenc	Human HER-2/neu pr	Human HER-2/neu on	2/neu	/neu extrac	O.	protein		Human protein for	protein fo	Human Her-2/neu on		n HER2	HER2 transgene pla

## ALIGNMENTS

```
RESULT 1
AAEL3121
ID AAEL
XX AAEL
XX AAEL
XX Imm
KW Imm
KW Imm
KW Imm
KW denc
XX Home
XX Home
XX JAM
XX JAM
XX Home
XX
                                                                                            WPI; 2001-662965/76.
N-PSDB; AAD21572.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAR-2000; 2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-MAR-2001; 2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200174855-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Immunostimulatory fusion protein; IFP; antigen component; therapy: immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; human; HER-2 membrane distal intracellular domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAE13121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAE13121 standard; Protein; 217 AA
                                                                                                                                                                                                                                                  Laus R,
                                                                                                                                                                                                                                                                                                                                               (DEND-) DENDREON CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mature human HER-2 membrane distal intracellular domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-JAN-2002 (first entry)
                                                                                                                                                                                                                                             Vidovic D,
                                                                                                                                                                                                                                                       Graddis
```

An immunostimulatory fusion protein comprising the intracellular domain

```
RESULT 2
AAE13122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is mature human HER-2 membrane distal intracellular domain.

This sequence is need in the uresponding to the present sequence is maded in the uresponding to the present sequence is maded in the uresponding to the present sequence is maded in the uresponding to the uresponding tof the uresponding to the uresponding to the uresponding to the ur
                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunostimulatory
dendritic cell; cc
human; HER-2 memb;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of
1s
                      N-PSDB;
                                                                                                                                                                                        30-MAR-2000;
                                                                                                                                                                                                                                    30-MAR-2001; 2001WO-US10515
                                                                                                                                                                                                                                                                                   11-OCT-2001
                                                                                                                                                                                                                                                                                                                                  WO200174855-A2
                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                             autoimmunogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NY-ESO-IC-HER-2 membrane distal intracellular domain fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAE13122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAE13122 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim
                                                                                                                                       (DEND-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Immunostimulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ,_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      {\tt HER\text{--}2} and an antigen elicits an immune response to the antigen useful for the treatment of associated cancer associated -
                                                                                      ۳,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence is used in the HER500 and HER300 GM-CSF fusion constructs
                                            2001-662965/76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 217;
                                                                                                                                         DENDREON CORP
                        AAD21573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                        Vidovic D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                      2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                      membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ry fusion protein; IFP; antigen component; thera ry component; T-cell mediated immune response; D colon cancer; breast carcinoma; ovarian cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fusion protein;
                                                                                           Graddis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 1182; 100.0%; Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                   intracellular domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₽
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 22;
1.8e-91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           217;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

밁 S

181

361 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP

397

DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217

ş

밁 Š Ş

ş

```
밁
                               Ş
                                                                        В
                                                                                                         Ş
                                                                                                                                                밁
                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                        Matches 217; Conserv
                                                                                                                                                                                                                                                                                                                                                 The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comports a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is a fusion protein which comprises human autoimmunogenic cancer/testis antigen, NY-ESO-IC and mature human HER-2 membrane distal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 An
of
                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 54-55; 59pp; English
                                                                                                                                                                                                                                                                                                                                    intracellular domain.
301
                                   121
                                                                          241
                                                                                                                                                181 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                           61
                                                                                                                                                                  1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated - \,
                                                                                                             LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                   PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPIIPPPAFSPAF
PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                        397 AA;
                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                          Score 1182; DB 22; Pred. No. 3.6e-91;
                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                               397;
                                                                                                                                                                                                                          0
                                                                                                                                                                                                              Gaps
                                                                                                                                                240
                                                                                                                                                                                     60
                                                                          300
```

0

```
RESULT 3
AAE13108
Chimeric - Chimeric -
                                                 30-MAR-2000;
                                                                     30-MAR-2001; 2001WO-US10515
                                                                                           11-OCT-2001
                                                                                                                WO200174855-A2
                                                                                                                                                                             membrane distal intracellular domain; C-terminal tag; human;
                                                                                                                                                                                       dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain;
                                                                                                                                                                                                            Immunostimulatory fusion protein; IFP; antigen component; therapy;
immunostimulatory component; T-cell mediated immune response; DC;
                                                                                                                                                                                                                                            Human HER500 fusion protein construct.
                                                                                                                                                                                                                                                                 28-JAN-2002
                                                                                                                                                                                                                                                                                                        AAE13108
                                                                                                                                                                    HER-2
                                                                                                                                                                   protein;
                                                                                                                                                                                                                                                                                                        standard;
                                                                                                                                    Synthetic
                                                                                                                                              Homo sapiens.
                                                2000US-193504P
                                                                                                                                                                    HER500 fusion
                                                                                                                                                                                                                                                                                                        Protein;
                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                         555
                                                                                                                                                                   protein
```

(DEND-) DENDREON CORP

Vidovic D,

Graddis T;

```
RESULT 4
AAE13110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                XXCCCCCCCCCCCX PXPTTX RR
X PRX FRX
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular domains and a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 200
                                                                                                                          Chimeric -
Chimeric -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 7; Page 26; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of
A
                                                                                                                                                                                 PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; OVA;
                                                                                                                                                                                                           Immunostimulatory fusion protein; IFP; antigen component; therapy; immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
             30-MAR-2000; 2000US-193504P
                                       30-MAR-2001; 2001WO-US10515
                                                                                                WO200174855-A2
                                                                                                                                                                                                                                                                          Human HER500
                                                                                                                                                                                                                                                                                                       28-JAN-2002
                                                                                                                                                                                                                                                                                                                                                               AAE13110 standard; Protein; 564 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330
                                                                                                                                                                                                                                                                                                                                                                                                                                       510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunostimulatory fusion protein comprising HER-2 and an antigen elicits an immune response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            useful for the treatment of associated cancer associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-662965/76
                                                                                                                                                                                                                                                                                                                                                                                                                                    DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      al Similarity
217; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 555
                                                                                                                          Homo sapiens.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                       ovalbumin-derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ŗ,
                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                      construct comprising OVA-derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1182;
Pred. No. 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                    octapeptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5.3e-91;
ss 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        response to the antigen and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                  fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
RESULT 5
AAE13109
ID AAE1
XX
AAE2
XX
AAE2
XX
DT 28;-J
XX
Inmu
KW Inmu
KW Inmu
KW Jenn
KW Jenn
KW HERE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 fusion protein construct which comprises human PAP signal sequence, mature HER-2 membrane distal extracellular domain, an alla linker, an ovalbumin (OVA)-derived immunodominant octapeptide, HER-2 membrane distal intracellular domain and a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 7;
                                                                                                                                                  PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; GM-CSF;
                                                                                                                                                                                                                                                                  Human HER500-hGM-CSF fusion protein construct.
                                                                                                                                                                                                                                                                                                                                                                                      AAE13109 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Laus
                                                                                                              HER-2 protein; granulocyte-macrophage colony HER-500-hGM-CSF fusion protein.
                                                                                                                                                                                      dendritic cell; colon cancer; breast carcinoma; ovarian
                                                                                                                                                                                                        Immunostimulatory fusion protein; IFP; antigen compo-
immunostimulatory component; T-cell mediated immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (DEND-) DENDREON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunostimulatory fusion protein comprising the intracellular domain HER-2 and an antigen elicits an immune response to the antigen and useful for the treatment of associated cancer associated - \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAARPAGATLERAKTLSPGKNGYVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-662965/76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 217;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vidovic D, . Graddis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Page 26; 59pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ŗ
                                                                                                                                                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      English.
                                                                                                                                                                                                                                                                                                                                                                                      690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1182; DB 22;
Pred. No. 5.4e-91;
                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                            component;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                            response;
                                                                                                                                                                                          cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       398
```

Chimeric -Chimeric -

Synthetic

WO200174855-A2

```
RESULT 6
AALIJILI
ID AAEIJ
XX AAEI
AC AAEI
XX AEI
XX IMMU
XX I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to immunoscimulatory comprise a nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 hGM-CSF fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular and intracellular domains, an Ala Ala linker, a mature human granulocyte-
                       immunostimulatory component; T-cell mediated immune response; DC; dendritic cell; colon cancer; breast carcinoma; ovarian cancer; PAP protein; Ala Arg linker; membrane distal extracellular domain; membrane distal intracellular domain; C-terminal tag; human; GM-CS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 An immunostimulatory fusion protein comprising the intracellular of HER-2 and an antigen elicits an immune response to the antiger is useful for the treatment of associated cancer associated -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              macrophage colony stimulating factor (GM-CSF) sequence C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 7; Page 26; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-MAR-2001;
                                                                                                                                           Immunostimulatory fusion protein; IFP; antigen component;
                                                                                                                                                                                                     Human
                                                                                                                                                                                                                                                             28-JAN-2002
                                                                                                                                                                                                                                                                                                                    AAE13111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (DEND-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-MAR-2000; 2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                         AAE13111 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG.60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-662965/76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEXVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
protein;
                                                                                                                                                                                                   HER500-rGM-CSF fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DENDREON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            690 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001WO-US10515
granulocyte-macrophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Graddis
                                                                                                                                                                                             construct comprising OVA-derived peptide
                                                                                                                                                                                                                                                                                                                                                                           697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 1182;
Pred. No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
colony
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 22;
5.8e-91;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                           therapy;
onse; DC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ed -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     690;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                             GM-CSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

RESULT 7
AAE13123
ID AAE1
XX
AC AAE1
XX
DT 28-J

standard;

Protein; 1179

28-JAN-2002 AAE13123; AAE13123

(first entry)

δÃ 밁 Ş В δõ 망 Q

339 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL

1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVEDGDLGMGAAKG

Matches

217;

Conservative

0

Mismatches

Indels

0,

Gaps 60

0

398

Similarity

100

밁

519 181 459 121 399

555

DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217

PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF

180 458

LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL

PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF

```
Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chimeric -
Chimeric -
Chimeric -
                                                                                                                                                                                                                                                                                                    The invention relates to immunostimulatory fusion proteins (IFP) and nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is HER500 rGM-CSF fusion protein construct which comprises human PAP signal sequence, mature PAP protein, an Ala Arg linker, human HER-2 signal sequence, mature HER-2 membrane distal extracellular domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
                                                                                                                                                                                                                         signal sequence, mature HER-2 membrane distal extracetitutat commann, an Ala linker, an ovalbumin (OVA)-derived imunodominant octapeptide, HER-2 membrane distal intracellular domain, an Ala Ala linker, a mature the mature of t
                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 7; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          İs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-MAR-2000; 2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-MAR-2001; 2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200174855-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ovalbumin-derived octapeptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunostimulatory fusion protein comprising the intracellular d
HER-2 and an antigen elicits an immune response to the antigen
useful for the treatment of associated cancer associated -
                                                                                                                                                                       granulocyte-macrophage
a C-terminal tag.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001-662965/76.
DB; AAD21567.
                                                                                                          697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
Rattus norve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27; 59pp; English.
                                                                                                          ΑA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    norvegicus
   .0%;
                                                                                                                                                                                                              colony stimulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;;
   Score 1182;
Pred. No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OVA; rat;
   DB 22;
5.9e-91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HER500-rGM-CSF fusion protein.
                                Length
                                                                                                                                                                                                                  (GM-CSF)
                                          697;
```

```
AAU98923
ID AAU9
XX
AC AAU9
                                                                                                                                            밁
                                                                                                                                                                      δ
                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acid molecules encoding such proteins. The IFPs comprise a polypeptide antigen component and an immunostimulatory component derived from the intracellular domain of HER-2 protein which is effective to elicit a protective dendritic cell (DC)-induced T-cell mediated cellular immune response to the antigen. IFP or superactivated dendritic cells are used to treat cancer e.g. breast carcinoma, ovarian and colon cancer associated with a particularly antigen. The present sequence is a fusion protein which comprises human squamous cell carcinoma antigen, SART3-IC and mature human HER-2 membrane distal intracellular domain.
                AAU98923;
                                                                                                                                            1143
                                                                                                                                                                                                                  1083
                                                                                                                                                                                                                                                                                         1023
                                                      AAU98923 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 55-58; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Laus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (DEND-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-MAR-2001; 2001WO-US10515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200174855-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                squamous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dendritic cell; colon cancer; breast carcinoma; ovarian cancer;
human; HER-2 membrane distal intracellular domain; SART3-IC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human SART3-IC-HER-2 membrane distal intracellular domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Immunostimulatory
                                                                                                                                                                              181
                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lamunostimulatory
                                                                                                                                                                                                                                                                                                                                                              963
                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 1182; DB 27
Local Similarity '100.0%; Pred. No. 1.2e-90;
Les 217; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           immunostimulatory fusion protein comprising the intracellular cher-2 and an antigen elicits an immune response to the antigen useful for the treatment of associated cancer associated -
                                                                                                                                                             DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                              DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                          LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001-662965/76.
DB; AAD21574.
                                                                                                                                                                                                                                                                                     LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DENDREON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vidovic D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cell carcinoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-193504P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       component;
                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Graddis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T-cell mediated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IFP; antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein.
                                                                                                                                            1179
                                                                                                                                                                              217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      component;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                       1082
                                                                                                                                                                                                                                                                                                                                                            1022
                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                  0
               Š
                                                    밁
                                                                                  Q
                                                                                                                        ₽
                                                                                                                                                       Qy
                                                                                                                                                                                             В
                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                          response against a cell comprising a target antigen (I) in a subject, CC treating a subject having undesired cells, for example tumour cells cor virally infected cells (C), reducing the number of (C) in a subject, and stimulating presentation of (I) by a cell. This is done by cadministering a polynucleotide (II) encoding a variant of (I), so that C (II) expressed in a cell and cell-mediated immune response is induced. The method can be used to treat prostate cancer, breast cancer, colorectal cancer and pancreatic cancer, as well as lymphomas and CC leukaemias. The method is also useful in treating chronic viral confections such as those caused by hepadnaviruses, lentiviruses and the coloriding human immunodeficiency virus (HIV), herpesviruses and the CC (including human immunodeficiency virus (HIV), herpesviruses and the CC (including human immunodeficiency virus (HIV), herpesviruses and the CC (including human immunodeficiency virus (HIV), herpesviruses and the CC (including human immunodeficiency virus (HIV), herpesviruses and the CC (including human immunodeficiency virus (HIV), herpesviruses and the CC (including human immunodeficiency virus (HIV), herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses and the CC (including human immunodeficiency virus (HIV)) herpesviruses (HIV) herpesviruses (HIV) herpesviruses (HIV) herpesviruses (HIV) her
                                                                                                                                                                                                                                                                  Query Match
Best Local Sim
Matches 217;
```

Claim 21; Page 134-138; 146pp;

an antigen

The invention relates to a method of inducing a cell-mediated immune

English.

1006

GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1065 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG

LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120

LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL

1125

PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAQQPHPPPAFSPAF 180 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQFHPPPAFSPAF

\_

Sequence

1223

Ą,

Similarity

100.0%;

Score 1182; DB 23 pred. No. 1.3e-90; ); Mismatches 0;

Indels Length

0;

Gaps

0

60

DB 23;

Conservative

0

1126

121

181

DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP

1066

```
WPI; 200
N-PSDB;
Inducing a cell-mediated immune response against a target ar reducing undesired cells and stimulating presentation of an a cell, comprises administering a polynucleotide encoding a
                                                                                                                                                                                                                                                                                                                01-NOV-2001;
                                                                                                                                         Mincheff MS,
                                                                                                                                                                                                                 (AMBI-)
                                                                                                                                                                                                                                                                            01-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                        23-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                             WO200240059-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cell-mediated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; Her2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-SEP-2002
                                                                                                                                                                                                 (LOUK/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          uman; Her2; cytostatic; antiviral; immunostimulant;
ell-mediated immune response; tumour; breast cancer;
rirus infection; prostate cancer; colorectal cancer;
ymphoma; leukaemia; hepadnavirus; lentivirus; herpes
                                                                                2002-527524/56
DB; ABK86207.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       immunodeficiency virus; HIV; flavivirus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            breast
                                                                                                                                                                                             AMERICAN FOUND BIOLOGICAL RES INC MINCHEFF M S. LOUKINOV D I.
                                                                                                                                                                             ZOUBAK S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                  2001WO-US45626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cancer antigen,
                                                                                                                                                                                                                                                                            2000US-0704232
                                                                                                                                         Į,
                                                                                                                                         Zoubak
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Her2 variant
                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ancer; pancreatic herpesvirus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pestivirus
    antigen
variant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cancer;
```

몂

1186

DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1222

```
RESULTANA 2022 AD AAY 9262 AT 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2620
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Heregulin 2; Her2; vaccination; cytotoxic T-lymphocyte self-protein; cancer; breast cancer; prostate cancer; cell-associated peptide antigen; foreign epitope.
Region
                                                                                                                                                                    Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human heregulin 2 (Her2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY92620
                                                            Region
                                                                                                                                                                                                                                   Regior
                                                                                                                                                                                                                                                                                                                                              Region
                                                                                                                                                                                                                                                                                                                                                                                          Doma in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Doma ir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Doma ir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Regior
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY92620 standard; Protein;
                                                                                                      Domair
                                                                                                                                                                                                                                                                               Domair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                       /note=
                                                                                                                                                                                                                                     /label
/label= insertior
/note= "suitable
695..709
                                                                                                                                                                                                                                                                                                    /note= "suitable
                                                                                                                                                                                                                                                                                                                                                                                                          /label= insertion_region
/note= "suitable for for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                  /label=
                                                                                                                            note- "suitable"
                                                                                                                                              /label-
                                                                                                                                                                                                               /label= insertion_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /label= insertion_region
/note= "suitable for for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label= insertion_region
/note= "suitable for foreign epitope insertion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label= insertion_region
/note= "suitable for foreign epitope insertion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= insertion_region
/label= "suitable for foreign epitope insertion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /label= insertion_region
/note= "suitable for for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note- "mature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label- N-terminal
                                                                                                                                                                                                                                                                                                                                                                    Tabel-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'label= insertion_region
'note= "suitable for foreign epitope insertion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          labe
                                                                                                                                                                                                                                                                                  . 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               insertion_regionsuitable for foreign epitope insertion
                                                                                                                                                                                           "suitable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "suitable for for
                                                                                                                                                                                                                                                                                                                                                                Cysteine_rich_domain
                                        insertion_region
                                                                                Tyrosine_kinase_doma
                                                                                                                 insertion_region
suitable for foreign epitope insertion
                                                                                                                                                                                                                                                       Transmembrane_domain
                                                                                                                                                                                                                                                                                        insertion_region
'suitable for foreign epitope insertion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ligand_binding_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cysteine_rich_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polypeptide'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ⋧
                 for foreign epitope insertion"
                                                                                                                                                                                      for foreign epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     foreign
                                                                                                                                                                                                                                                                                                                                                                                                          foreign
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           foreign
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                foreign
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        epitope insertion'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     epitope,insertion
                                                                                                                                                                                                                                                                                                                                                                                                          epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                epitope insertion'
                                                                                                                                                                                         insertion'
                                                                                                                                                                                                                                                                                                                                                                                                          insertion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunity;
```

```
S
                                            밁
                                                                         Ş
                                                                                                          밁
                                                                                                                                      δÃ
                                                                                                                                                                      밁
                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                             cancers (self-proteins), e.g. human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 secell group derived from the cell-associated PA; and (2) at least 1 first T halper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/murine FGF8b comprising a substantial part of all known and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper epitope are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively.
                                             1158
                                                                                                           1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     helper epitopes were identified (see features table). The method is used for inducing immune responses against weakly immunogenic cell-associated peptide antigens (PA) such as those associated with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Steinaa L,
Gautam A,
                                                                                                                                                                      1038 GAGGMYHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    response. Subdominant CTL epitopes, antibody binding regions a cysteine residues involved in disulfide bonds are preserved in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This is the human heregulin 2 (Her2) sequence. Immunogenic analogues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 62; Page 193-198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Inducing immune responses to weakly immunogenic, peptide antigens for the treatment of breast and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB; AAA09455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-349917/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-OCT-1998;
20-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Her2 can be used in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (MEBI-) M & E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200020027-A2
181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mmunogenized forms.
                                                                                                                          61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                          1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                              PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                      217;
                                             PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                           LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Birk P,
                                                                                                                                                                                                                                                                                                    1255
                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mouritsen S, Ni
Birk P, Karlsson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BIOTECH AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98DK-0001261
98US-0105011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-DK00525
                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label- insertion_region
/note- "suitable for foreign
710..730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1011..1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /label= insertion_region
/note= "suitable for foreign epitope insertion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'label= C-terminal_domain
                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Regions suitable for the insertion of foreign
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    claimed method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                220pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nielsen
                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ູດ
                                                                                                                                                                                                                                    Score 1182; DB 21;
Pred. No. 1.3e-90;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           გ
ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   as an autovaccine to induce a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Haaning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         epitope insertion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tumor associated prostate cancer
                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Leach D,
                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dalum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                          1097
                                               1217
                                                                                                                                          120
                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٠.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٠.
                                                                                                                                                                                                                                      0
```

멍

DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254

```
RESULT 10
AAE12130
 밁
                        Ş
                                                        밁
                                                                                  Ş
                                                                                                                                                                            Query Match
Best Local
                                                                                                                 Matches 217;
                                                                                                                                                                                                              for inducing an immune response in a subject and for use in adoptive immunotherapy. They are useful as components of anti-cancer vaccines and to expand immune effector cells that are specific for cancers characterised by expression of the breast cancer antigen, HER-2. Polynucleotides that encode peptides of the invention are useful as hybridisation probes and as primers for the detection of genes of gene transcripts that are expressed in antigen presenting cells (APCs), to confirm transduction of polynucleotides into host cells. The present sequence is human tyrosine kinase-type receptor, HER-2. Compounds of the invention are designed based on the HER-2 antigenic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel synthetic therapeutic compound for inducing immune response and for use in adoptive immunotherapy, has enhanced binding to major histocompatibility molecules and enhanced immunoregulatory properties
                                                          1038
                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                  to their natural counterparts. Compounds of the invention are useful
                                                                                                                                                                                                                                                                                                                                                                             The invention relates to synthetic therapeutic compounds (antigenic peptides) with enhanced binding to major histocompatibility complex (MHC) molecules and enhanced immunoregulatory properties relative
                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nicolette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200168677-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antigenic peptide; MHC;
adoptive immunotherapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Therapeutic compound;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human tyrosine kinase-type receptor, HER-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAE12130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAE12130 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GENZ ) GENZYME CORP.
                             61
                                                                                                                                Local
                                                                                       _
                                                                       GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
             LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                        GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001-616284/71.
)B; AAD19731.
LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       presenting cell; human; tyrosine kinase-type receptor
                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                          Page
                                                                                                                                                                           1255 AA;
                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0527487.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001WO-US40328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                           63-67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers 774..782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note-
                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                          69pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   major histocompatibility complex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Antigenic epitope"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunoregulatory; immune response; i
anti-cancer; breast cancer antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                          English.
                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1255
                                                                                                                 Score 1182;
Pred. No. 1.3
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                              DB 22;
1.3e-90;
                                                                                                                  Indels
                                                                                                                                            Length
                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APC;
                                                                                                                 Gaps
                                                                                     60
                                                                                                                 0
```

Ş Вþ Š В Q

121

1098

61

1038 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097

LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120

1157

PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180

PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF

1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60

Conservative

Mismatches

0

В

```
RESULT 11
AAB60167
                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
 Query Match
Best Local S
Matches 217
                                                                  The present invention provides a method of treating cancer by administering a conjugate of anti-ErbB antibody with a maytansinoid. I particular, the antibody is directed against ErbB2 (also known as HER2 and pl85neu). The method is particularly useful in the treatment of breast, ovarian, stomach, endometrial, salivary gland; lung, kidney, colon, colorectal, thyroid, pancreatic, prostate and bladder cancers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1158
                                                                                                                                                                                Treating tumors, particularly breast cancers, receptor and does not respond to an anti-ErbB conjugating the antibody to a maytansinoid -
                                                                                                                                                                                                                                N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HER2 transgene
                                                 Sequence
                                                                                                                                                           Example 3;
                                                                                                                                                                                                                                                                  Erickson S,
                                                                                                                                                                                                                                                                                                                  25-JUN-1999; 99US-0141316.
16-MAR-2000; 2000US-0189844.
                                                                                                                                                                                                                                                                                                                                                    23-JUN-2000; 2000WO-US17229
                                                                                                                                                                                                                                                                                                                                                                            04-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                    WO200100244-A2
                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; HER2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB60167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB6016,7 standard; Protein; 1255
                                                                                                                                                                                                                                                                                          (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                2001-061962/07.
DB; AAF24297.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAARPAGATLERAKTLSPGKNGYVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 1217
 al Similarity
217; Conserv
                                                 1255
                                                                                                                                                         Fig 4; 92pp;
                                                                                                                                                                                                                                                                  Schwall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ErbB2 receptor; p185neu; maytansinoid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 plasmid
                                                 Ŗ,
            100.0%; Score 1182; DB 22; 100.0%; Pred. No. 1.3e-90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  construct encoded
                                                                                                                                                         English.
   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           217
                                                                                                                                                                                             which overexpress an antibody, comprises
Indels '
                      Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          conjugate;
  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cancer;
Gaps,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                        ErbB
   <u>..</u>
```

Ş

181

217

δ

밁

밁

õ 밁 S

В

```
AAU74545
ID AAU74
XX 
                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                   Query Match
Best Local
                                                                                            Matches
                                                                                                                                                                                                                                                                              anti-ErbB antibody-maytansinoid conjugate. The method is useful for treating cancer or tumours of the breast, ovar, stomach, endometrium, salivary gland, lung, kidney, colon, colorectum, thyroid, pancreas, prostate and bladder, preferably breast cancer. The breast cancer is a metastatic breast cancer or an aggressive form of metastatic breast cancer which overexpresses ErbB2. The method is also useful for treating neuronal, glial, astrocytal, hypothalamic, glandular, macrophagal, epithelial, stromal, blastocoelic, inflammatory, angiogenic and immunological disorders. This sequence represents the human HER2 (ErbB2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; HER2; ErbB; epidermal growth factor receptor; receptor; anti-ErbB antibody-maytansinoid conjugate; cancer; tumour; breast; ova. stomach; endometrium; salivary gland; lung; kidney; colon; colorectum; thyroid; pancreas; prostate; bladder; ErbB2; neuronal disorder; gland disorder; astrocytal disorder; hypothalamic disorder; glandular disorder; macrophagal disorder; epithelial disorder; stromal disorder; blastocoelic disorder; inflammatory disorder; angiogenic disorder; immunological disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   receptor (ErbB) and does not respond or responds poorly, to treatment with an anti-ErbB antibody, comprising administering to the mammal an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Treating tumour characterised by overexpression of epidermal growth factor receptor, ErbB or cancer in mammal, comprises administering anti-ErbB antibody-maytansinoid conjugate to the mammal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-MAR-2000;
05-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1218
                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to treating a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Erickson S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ERIC/) ERICKSON S.
(SCHW/) SCHWALL R.
(SLIW/) SLIWKOWSKI M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    03-JAN-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human HER2 (ErbB2) polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAU74545;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAU74545 standard; Protein;
                                                                                                                                                                                                                                                          polypeptide of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US2002001587-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               characterised by
GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2002-163686/21
                                                                                      al Similarity
217; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABK14058
                                                                                                                                                                                                   1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fig 7; 93pp; English.
                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schwall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-189844P
2000US-238327P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001US-0811123
                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                   Ą,
                                                                                                                                                                                                                                                             invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      s to treating a tumour in a mammal, where the tumour the overexpression of an epidermal growth factor
                                                                                                                   100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           æ
                                                                                                                   .
09
8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sliwkowski
                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1255
                                                                                                                Score
Pred.
                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ξ
                                                                                                                1182;
No. 1
                                                                                DB 23;
1.3e-90;
2S 0;
                                                                                      Indels
                                                                                                                                          Length
                                                                                                                                            1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   breast; ovary;
                                                                                      0,
                                                                                      Gaps
                               60
                                                                                      0
```

B õ

49

Query Match Best Local Matches

Local Similarity 99.9es 216; Conservative

99.5%;

Score 1177; DB Pred. No. 6e-91; 0; Mismatches

Length Indels.

0

Gaps

```
RESULT 13
AAB21201
                                                               The present sequence is the phosphorylation domain of the HER-2/neu protein. HER-2/neu is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell-growth and/or differentiation. The HER-2/neu gene is an oncogene. An HER-2/neu fusion protein comprising a HER-2/neu extracellular domain fused to a HER-2/neu phosphorylation domain may be used to treat or prevent cancer by eliciting or enhancing an immune response to the HER-2/neu protein. It may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1218
                                                                                                                                                                                                                                                                                                                                                                                                    HER-2/neu extracellular useful for vaccinating a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB21201 standard; protein; 266
Sequence
                                                                                                                                                                                                                                                                                                                                    Claim 2;
                                                                                                                                                                                                                                                                                                                                                                                   prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-505976/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cheever MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-JAN-2000; 2000WO-US02164.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      03-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200044899-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                colon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      breast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1038 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                              neoplasias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HER-2/neu; oncogene; tyrosine kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORIXA CORP
                                                                                                                                                                                                                                                                                                                                    Fig 10; 128pp;
                                                                                                                                                                                                                                                                                                                                                                                   cancers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
  Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0117976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BEECHAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ö
                                                                                                                                                                                                                                                                                                                                                                                                       against
                                                                                                                                                                                                                                                                                                                                                                                                       domain/phosphorylation domain fusion against breast, ovarian, colon, lung a
                                                                                                                                                                                                                                                                                                                                    English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ovarian cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cytostatic; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer;
                                                                                                                                                                                                                                                                                                                                                                                                       n proteins and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
```

```
AAM51146
ID AAM51
XX AAM51
XX AAM51
XX AAM51
XX AAM51
XX AAM51
XX Humar
XX Humar
XX Homo
XX Ho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
The present sequence is that of the phosphorylation domain of thuman Her-2/neu (p185 glycoprotein or c-erbB2), an oncogenic self-protein and target for anti-cancer vaccines. The Her-2/neu gene is amplified and p185 is overexpressed in a variety of cancers, including breast, ovarian, colon, lung and prostate cancer. Her-2/neu (see AAM51143) is a member of the tyrosine kinase family of receptor-like glycoproteins. It comprises an extracellular domain with homology to the epidermal growth factor receptor (EGFR), a highly hydrophobic transmembrane domain and a C-terminal coverexpression correlates with a poor prognosis in breast and ovarian cancers. The invention provides Her-2/neu fusion proteins, nucleic acids encoding them, viral vectors, and vaccines comprising the fusion proteins or nucleic acid molecules. In protein is fused to a Her-2/neu protein is fused to a Her-2/neu intracellular domain or a Her-2/neu protein is fused to a Her-2/neu protein is elicited or enhanced by response to Her-2/neu protein is elicited or enhanced by caministering the fusion protein in the form of a vaccine, or by the fusion protein, and delivering the transfected cells to the animal. The fusion proteins, nucleic acids, and isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Her-2/neu fusion protein for treating or preventing cancer by or enhancing an immune response to the protein, has Her-2/neu extracellular domain fused to Her-2/neu intracellular or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        phosphorylation domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cheever
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    03-AUG-2000; 2000US-0632507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-AUG-2001; 2001WO-US24283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200212341-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Her-2/neu; oncogene; cancer; tumour; vaccine; human; p185;
tyrosine kinase; receptor; c-erbB2; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human Her-2/neu oncoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAM51146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAM51146 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2002-241743/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2; F1g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ¥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORIXA CORP.
SMITHKLINE BEECHAM BIOLOGICALS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gheysen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10; 141pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    phosphorylation domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          eliciting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               168
```

```
RESULT 15
AAE20483
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Sir
Matches 216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancer, especially breast, ovarian, colon, lung or prostate cancer at the transfer of the street of the street with a Her-2/neu fusion protein can be used to remove tumour cells from a sample order to inhibit the development of cancer in a patient.
                                                prevention
                                                                                                                                                                                                                                                                        Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                AAE20483 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             specific T-cells are useful for inhibiting the development
                                               Novel isolated prevention and
                                                                                                          Hand-zimmermann S, (
Mcneill PD, Vedvick
                                                                                                                                                                     14-AUG-2000;
28-SEP-2000;
                                                                                                                                                                                                                        21-FEB-2002
                                                                                                                                                                                                                                           WO200214503-A2
                                                                                                                                                                                                                                                                                                      Homo
                                                                                                                                                                                                                                                                                                                          human leukocyte
                                                                                                                                                                                                                                                                                                                                                       Human
                                                                                                                                                                                                                                                                                                                                                                           01-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                              AAE20483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                        (CORI-) CORIXA CORP
                                                                                                                                                                                                    14-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                            2002-280758/32
DB; AAD32746.
                                                                                                                                                                                                                                                                                                      sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                  Her-2/Neu protein; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      266
                                                                                                                                                           2000US-225152P.
2000US-236428P.
2001US-270520P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                    2001WO-US41733
                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                               Her-2/Neu
diagnosis
                                                                                                                                                                                                                                                                                                                                                      for the clone HICD_native_coding_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                       Location/Qualifiers 581..583
                                                                                                                                                                                                                                                                                                                         antigen; HLA; vaccine; malignancy; cytostatic
                                                                                                                                                                                                                                                               /note-
                                                                                                         Cheever
k TS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99.5%;
                                                                                                                                                                                                                                                              "Encoded by
                                               of cancer, preferably by
                                                                                                                    MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1177; DB Pred. No. 6e-91;
                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                    Foy
                                                                                                                                                                                                                                                              GTGTAATGACTC
                                                                                                                    ,MT
                                                                                                                     Lodes
                                                                                                                                                                                                                                                                                                                                  gene therapy; breast cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23;
                                                breast
                                                                                                                     ξ
                                                useful for therapy, reast cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                    Kalos
                                                                                                                    ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
```

The invention relates to an isolated Her-2/Neu polypeptide effective for eliciting an immune response. The invention is

e composition is useful for

Example 5; Page 121-122;

129pp; English

₽ CC eliciting an immune response in a patient, where the patient is human CC leukocyte antigen (HLA)-B44 positive or is affected with breast cancer. CC The composition is useful for the therapy and diagnosis of cancer. CC preferably breast cancer, in pharmaceutical compositions, e.g., vaccine CC and other compositions for the diagnosis, prevention and treatment of Chuman malignancies, for stimulating and/or expanding T cells specific for CC Her-2/Neu polypeptide and for inhibiting the development of cancer in a CC patient. The invention is useful for stimulating a T cell response in a CC patient. The invention is useful for stimulating a T cell response in a CC patient, as probe or primer for nucleic acid hybridisation, to CC cell treatment of cancer in a CC polypeptide from a pullable and for the complementary stretches of the CC length gene from a suitable library, and to direct expression of a CC polypeptide in appropriate host cells. The composition is useful in CC prophylactic or therapeutic applications and for the treatment of cancer, CC preferably for the immunotherapy of breast cancer and other Her-2/Neu-cc associated malignancies. The invention is useful in gene therapy. The CC present sequence is human protein for the clone HICD\_native\_coding\_ Query Match
Best Local Similarity
Matches 216; Conserv Sequence region. 181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217 484 121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180 424 364 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 423 61 1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 483 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120 PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 583 AA; Conservative 99.5%; 0, Score 1177; DB 23; Pred. No. 1.5e-90; Mismatches Length 583; 0 Gaps 543 0;

Search completed: April 28, 2003, 13:39:47 Job time: 18.4181 secs

Ş

밁

544

DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 580

õ

밁

Ş 밁 á

```
Run
                                                                                                                                                                                                                                              Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB DB
                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 0
length: 2000000000
100.
100.
100.
99.6
                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-821-883-25
1182
                                                                                              100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 April 28, 2003, 13:40:24; Search time 7.98328 Seconds
                                                                                                                                                                                                                                              Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301932 seqs, 80129803 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Published_Applications_AA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGMVHHRHRSSSTRSGGG...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                          /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*
                                                                                                                                                                                                                               Length
                                                                              690
697
1179
                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapext 0.5
                                                                          10010
                                                    10 US-09-821-883-25

10 US-09-821-883-27

10 US-09-821-883-3

10 US-09-821-883-3

10 US-09-821-883-2

10 US-09-821-883-2

10 US-09-821-883-2

10 US-09-821-883-29

10 US-09-821-883-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       summaries
                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .....STFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (without alignments)
2178.074 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301932
                                                                                                                                                                                                                           Description
                                                                                                           Sequence
Sequence
Sequence
                                                                                                                                                                  Sequence
Sequence
                                                                        Sequence 4, Appli
Sequence 29, Appl
                                                                                          25, Appl
27, Appl
1, Appli
3, Appli
2, Appli
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
113.5	113.5	113.5	113.5	113.5	114	115.5	115.5		118	118	118.5	120	121	124	126	127.5	134	155	157	164	648.5	711	954	954	961
9.6	9.6	9.6	9.6	9.6	9.6	9.8	9.8	9.8	10.0	10.0	10.0	10.2		10.5	10.7	10.8	11.3	13.1	13.3	13.9	54.9	60.2	80.7	80.7	81.3
7968	2630	1665	803	726	1464	743	743	731	684	419	731	699	428	503	1274	507	674	705	1308	1210	135	293	1260	1256	1256
9	9	10	10	10	ø	10	10	9	10	10	9	9	9	9	9	9	ဖ	9	10	10	10	9	9	9	9
US-10-077-130-5	US-10-077-130-2	US-09-858-664A-2	US-09-770-689A-2	US-09-770-689A-4	US-10-060-036-159	US-09-771-161A-254	US-09-771-161A-164	US-10-086-464-17	US-09-823-240-9	US-09-814-777A-36	US-10-086-464-8	US-10-121-988-143	US-09-906-514-4	US-10-078-547-2	US-10-020-215-2	US-10-078-547-24	US-10-086-464-14	US-09-158-722-4	US+09-940-101-2	US-09-725-433-2	US-09-925-301-1232	US-10-102-806-583	US-09-870-759-118	US-09-854-356-2	US-09-854-356-14
•	Sequence 2, Appl1	Sequence 2, Appli	Sequence 2, Appli	Sequence 4, Appli	Sequence 159, App	-	Sequence 164, App	Sequence 17, Appl		Sequence 36, Appl	Sequence 8, Appli	Sequence 143, App	Sequence 4, Appli	Sequence 2, Appl1	Sequence 2, Appl1	Sequence 24, Appl	Sequence 14, Appl	Sequence 4, Appli		Sequence 2, Appli	Sequence 1232, Ap	Sequence 583, App	Sequence 118, App	Sequence 2, Appli	Sequence 14, Appl

## ALIGNMENTS

RESULT 1 US-09-821-883-25

GENERAL

INFORMATION

Sequence 25, Application US/09821883 Patent No. US20020061310A1

APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30

Dendritic

```
; TYPE: PRT; ORGANISM: Homo sapiens US-09-821-883-25
                                                                                       뫄
                                                                                                         Q
                                                                                                                                    В
                 S
                                           В
                                                                Ş
                                                                                                                                                         Š
                                                                                                                                                                             Query Match
Best Local Similarity
Matches 217; Conserv
          181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                            121
                                                                  121
                                                                                         61
                                                                                                              61
                                                                                                                                    PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                   LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRFQPPSPREGPL
DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                           PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                      LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                  Conservative
                                                                                                                                                                                          100.0%;
                                                                                                                                                                                0;
                                                                                                                                                                               Score 1182; DB 10 Pred. No. 5.3e-70; Mismatches 0;
                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                Indels · 0;
                                                                                                                                                                                                     Length
                                                                                                                                                                                                       217;
                                                                                                                                                                          Gaps
                                             180
                                                                  180
                                                                                         120
                                                                                                                120
                                                                                                                                    60
                                                                                                                                                           60
                                                                                                                                                                                  <u>.</u>.
```

NUMBER OF SEQ ID NOS: 30 OSOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 25
LENGTH: 217

PRIOR APPLICATION NUMBER: US 60/193,504 PRIOR FILING DATE: 2000-03-30 CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30

10

0 US-09-811-123-9 0 US-09-811-115-3 US-09-824-356-4 US-09-930-125-9 US-09-930-125-10 US-09-930-125-11 US-09-930-125-11 US-09-854-356-1 US-09-854-356-1

Sequence 2, Appli Sequence 9, Appli Sequence 3, Appli Sequence 4, Appli Sequence 8, Appli Sequence 10, Appl Sequence 11, Appl Sequence 11, Appli Sequence 1, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 6, Appli

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 3
US-09-821-883-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
US-09-821-883-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-821-883-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-821-883-27
                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 27
                                                                                                          SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No. US20020061310A1 GENERAL INFORMATION:
                                                                                                                            NUMBER OF SEQ ID NOS: 30 SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                            TITLE OF INVENTION: Compositions and Methods for Dendritic TITLE OF INVENTION: Cell-Based Immunotherapy FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/09/821,8
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
TITLE OF INVENTION: Compositions and Methods for Dendritic
TITLE OF INVENTION: Cell-Based Immunotherapy
FILE REFERENCE: 7636-0022.30
                                                                           TYPE: PRT
                                                                                                                                                                                                                                                                                                          APPLICANT: Vidovic, Damir
APPLICANT: Graddis, Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                             APPLICANT: Laus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Laus,
                                     ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: NY-ESO-IC tumor antigen
               OTHER INFORMATION: HER500 construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENGTH: 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
nes 217; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27,
                                                                                            555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                               Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/09821883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/09/821,883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1182;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32; DB 10;
le-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
밁
                           Š
                                                            밁
                                                                                          Š
                                                                                                                          밁
                                                                                                                                                        οy
                                                                                                                                                                                          В
                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-821-883-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                       US-09-821-883-3
                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 3
LENGTH: 564
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                        Best Local Similarity Matches 217; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 60/193,504 PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: CURRENT FILING DATE: 2001-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Compositions and Methods for Dendritic TITLE OF INVENTION: Cell-Based Immunotherapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Vidovic, Damir APPLICANT: Graddis, Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Laus, Reiner
APPLICANT: Vidovic, Day
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                                                                                               FEATURE:
OTHER INFORMATION: HER500* construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  519
              181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                              459
                                                                              121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                            399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       390 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 449
                                                                                                                                                                                          339 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                            61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                         PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                            PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                            LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-03-30
                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/09/821,883
                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                       Score 1182;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1182; DB 10 Pred. No. 1.4e-69;
                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                       1.4e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10;
555
                                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               546
                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                    Length 564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 555;
                                                                                                                                                                                                                                                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                            398
                                                                                                                              458
                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

US-09-821-883-2 ; Sequence 2, Application US/09821883 ; Patent No. US20020061310A1

GENERAL INFORMATION

```
밁
                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                        ; OTHER INFORMATION: HER500*-rGM-CSF construct US-09-821-883-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
US-09-821-883-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHER INFORMATION: HER500-hGM-CSF construct US-09-821-883-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4, Application US/09821883 Patent No. US20020061310A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                      Matches
                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 2
                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Compositions and Methods TITLE OF INVENTION: Cell-Based Immunotherapy FILE REFERENCE: 7636-0022.30
CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Compositions and Methods for Dendritic TITLE OF INVENTION: Cell-Based Immunotherapy FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 30 SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                         TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                            D ID NO 4
LENGTH: 697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENGTH: 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       450
   339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330 GAGGWVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 389
                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / Match 100.0%;
Local Similarity 100.0%;
les 217; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 509
                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                       Vidovic, Damir
Graddis, Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Graddis, Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Vidovic, Damir
                                                                   100.0%;
llarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Reiner
                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1182; DB 10
Pred. No. 1.8e-69;
; Mismatches 0;
                                                                   Score 1182; DB 10
Pred. No. 1.8e-69;
; Mismatches 0;
                                                                                                     DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                         for Dendritic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 690;
                                                                                                    Length
                                                                                                     697;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                   Gaps
                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
; TYPE: PRT; ORGANISM: Artificial Sequence; FEATURE: ; OTHER INFORMATION: SART-3-IC US-09-821-883-29
                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>ي</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                 RESULT 8
US-09-769-508-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-821-883-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/821,883
CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: US 60/193,504
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 217; Conserv
                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                         Sequence 2, Application US/09769508 Patent No. US20020155527A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION: APPLICANT: Laus, Re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No.
                  APPLICANT: CHAO, LORRINE A.
APPLICANT: BLUFORD, PETER
TITLE OF INVENTION: C-ERBB-2 EXTERNAL DOMAIN: GP75
FILE REFERENCE: BEBIO-111-C1
                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Compositions and Methods for Dendritic
                                                                                                                                  APPLICANT:
                                                                                                                                                    APPLICANT: STUART, SUSAN G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILE REFERENCE: 7636-0022.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
CURRENT APPLICATION NUMBER: US/09/769,508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 1179
                                                                                                                                                                                                                                                                                                                                                                                          1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1023
                                                                                                                                                                                                                                                                                                                                181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               963 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                                                                                                                                          PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                             DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                        PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9, Application US/09821883
US20020061310A1
                                                                                        MONAHAN, JOHN J.
LANGTON, BEATRICE
HANCOCK, MIRIAM E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vidovic, Damir
Graddis, Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Reiner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                            CLAUDIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 1182; DB 10;
Pred. No. 3.1e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  458
```

SEQ ID NO 2

SOFTWARE: PatentIn

Ver.

CURRENT FILING DATE: NUMBER OF SEQ ID NOS:

2001-01-26

```
S
                                                                                                                                                                           밁
5
                                    밁
                                                                  Ş
                                                                                                      밁
                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; LENGTH: 1255
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-769-508-2
                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 100.0%;
Best Local Similarity 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 9, Application US/09811123 Patent No. US20020001587A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR FILING DATE: 2000-10-05
PRIOR APPLICATION NUMBER: 09/602,530
PRIOR FILING DATE: 2000-06-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT FILING DATE: 2001-03-16
PRIOR APPLICATION NUMBER: 60/238,327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: METHODS OF TREATMENT USING ANTI-EIBS TITLE OF INVENTION: ANTIBODY-MAYTANSINOID CONJUGATES FILE REFERENCE: GENENT.073A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Sharon Erickson
APPLICANT: Ralph Schwall
APPLICANT: Mark Sliwkowski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/811,123
                                                                                                                                                                                                                                                                                                                                 ORGANISM: Homo sapiens
                                    1158
                                                                                                        1098
                                                                                                                                                                       1038 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097
                                                                                                                                                                                                                                                                                                                                                                   ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1038 GAGGMYHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
 181
                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                            Local Similarity 100 es 217; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                       LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                         GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                      PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 1217
                                                                                                     LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                   1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                        100.0%; Score 1182; DB 10; 100.0%; Pred. No. 3.3e-69; tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1182; DB 9;
Pred. No. 3.3e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                     1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; LENGTH: 1255
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-811-115-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-811-115-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-854-356-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 217; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: FastSEQ for Windows Version SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3, Application US/09811115
Patent No. US20020035736A1
                                                                                                                                                                                                                                                 SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: Cheever, Martin A.
APPLICANT: Gheysen, Dirk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4, Application US/09854356 Patent No. US20020177567A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL
OTHER INFORMATION: phosphorylation domain (PD) of human HER-2/neu -09-854-356-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/189,844
PRIOR FILING DATE: 2000-03-16
NUMBER OF CONTROL OF 
                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: US 09/493,480 PRIOR FILING DATE: 2000-01-28 PRIOR APPLICATION NUMBER: US 60/117,976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/854,356
CURRENT FILING DATE: 2001-05-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Gheysen, Dirk
APPLICANT: Corixa Corporation
APPLICANT: SmithKline Beecham Biologicals S.
APPLICANT: SmithKline Beecham Proteins
                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn
                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 26
                                                                                                                                                                                                                                                                                                                                                                         PRIOR FILING DATE: 1999-01-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 014058-009810PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: HER-2 TO FILE REFERENCE: GENENT.034A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Erickson, Sharon
                                                                                                                    TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PPLICANT:
                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PPLICANT:
                                                                                                                                                                                                          CENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1038 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1218 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1218 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1098 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQFHPPPAFSPAF '180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION:
                                                                                                                                                                                                              266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   King, Kathleen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Schwall,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ralph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSGENIC NON-HUMAN TUMOR MODEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/09/811,115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1182; DB 10
Pred. No. 3.3e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1217
```

```
RESULT 13
US-09-930-125-8
; Sequence 8, Application US/09930125
; Publication No. US20020193329A1
; GENERAL INFORMATION:
; APPLICANT: Hand-Zimmerman, Susan
                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: MCRR111, Patricia D.
APPLICANT: VedOvick, Thomas S.
APPLICANT: VedOvick, Thomas S.
TITLE OF INVENTION: COMPOSITIONS AND METHDOS FOR THE THERAPY AND DIAGNOSIS TITLE OF INVENTION: OF HER-2/NEU-ASSOCIATED MALIGNANCIES
FILE REFERENCE: 2101.21.544
CURRENT APPLICATION NUMBER: US/09/930,125
CURRENT FILING DATE: 2001-08-14
NUMBER OF SEQ ID NOS: 25
SOFTWARE: FastSEQ for Windows Version 3:0
SEQ ID NO 9
LENGTH: 583
TYPE: PRT
RORANLISM: Homo saplens
US-09-930-125-9
                                                                                                                                  Ş
                                                                                                                                                                В
                                                                                                                                                                                     Ş
                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
US-09-930-125-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 р
                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 9, Application US/09930125 Publication No. US20020193329A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                1. GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                             544
                                                                                                                          181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                 484
                                                                                                                                                                            121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                        Local Similarity 99.5 les 216; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                             DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 580
                                                                                                                                                               PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hand-Zimmerman, Susan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kalos, Michael J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cheever, Martin A. Foy, Teresa M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                   99.6%;
99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99.68;
99.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                   Score 1177; DB 9;
Pred. No. 3.1e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1177; DB 9;
Pred. No. 1.4e-69;
                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                Length 583;
                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                      423
                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                543
                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                        ; ORGANISM: Homo US-09-930-125-10
                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
US-09-930-125-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 216
                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                 LENGTH: 58
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT
                    372 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                589
```

```
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THILE OF INVENTION: OF HER-2/NEU-ASSOCIATED MAINTENAMENT OF THE PROPERTY OF THE PROPERTY APPLICATION NUMBER: US/09/930,125 CURRENT FILING DATE: 2001-08-14 NUMBER OF SEQ ID NOS: 25 SOFTWARE: FastSEQ for Windows Version 3.0 SEQ ID NO 8

SEQ ID NO 8

LENGTH: 587

TYPE: PRT
ORGANISM: Homo sapiens
US-09-930-125-8
                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/09/930,125
CURRENT FILING DATE: 2001-08-14
NUMBER OF SEQ ID NOS: 25
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 10
                                                    Query Match
Best Local Similarity
Matches 216; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION: APPLICANT: Hand-Zimmerman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 10, Application US/09930125 Publication No. US20020193329A1
                                                                                                                                                                                                                                                                                            APPLICANT: McNeill, Patricia D.
APPLICANT: Vedvick, Thomas S.
TITLE OF INVENTION: COMPOSITIONS AND METHDOS FOR THE THERAPY
TITLE OF INVENTION: OF HER-2/NEU-ASSOCIATED MALIGNANCIES
FILE REFERENCE: 210121.544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
les 216; Conserv
1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GAGGMYHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 580
                                                                                                                                                                                                                                                                                                                                                                                          Lodes, Michael J. Kalos, Michael D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               McNeill, Patricia D. Vedvick, Thomas S.
                                                                                                                                                                                                                                                                                                                                                                                                                                 Foy, Teresa M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cheever, Martin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lodes, Michael
Kalos, Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Foy, Teresa M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                               sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99.68;
                                                                      99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Susan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1177; DB 9;
Pred. No. 3.2e-69;
0; Mismatches 1
                                                    Score 1177; DB 9; Pred. No. 3.2e-69; 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FOR THE THERAPY MALIGNANCIES
                                                                                      Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                               AND DIAGNOSIS
                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DIAGNOSIS
                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                         543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ö
                                                      0
```

```
CURRENT APPLICATION NUMBER: US/09/930,125;
CURRENT FILING DATE: 2001-08-14;
NUMBER OF SEQ ID NOS: 25
SOFTWARE: FASTSEQ for Windows Version 3.0;
SEQ ID NO 11;
LENGTH: 600;
TYPE: PRT
ORGANISM: Homo sapiens
US-09-930-125-11
                                                                                          Ş
                                                                                                                                                         Š
                                                                                                                                                                                           B
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
US-09-930-125-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
Search completed: April 28, 2003, 13:44:07 Job time: 7.98328 secs
                                                               В
                                                                                                                             망
                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                     Query Match 99.6
Best Local Similarity 99.5
Matches 216; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 11, Application US/09930125 Publication No. US20020193329A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PPLICANT: MCNeill, Patricia D.

PPLICANT: Vedvick, Thomas S.

TITLE OF INVENTION: COMPOSITIONS AND METHDOS FOR THE THERAPY AND DIAGNOSIS

TITLE OF INVENTION: OF HER-2/NEU-ASSOCIATED MALIGNANCIES

TILE REFERENCE: 210121.544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PPLICANT: Hand-Zimmerman, Susan
                                                                                                                              503
                                                                                                                                                                                       61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                       563
                                                                                                                                             121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        552 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 588
                                                                              181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 DNLYYWDODPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        492 PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                             PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                             DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lodes, Michael J. Kalos, Michael D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Foy, Teresa M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                    99.6%;
                                                                                                                                                                                                                                                                                                                      Score 1177; DB 9;
Pred. No. 3.2e-69;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                    Length 600;
                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       491
                                                                                                                                                                                                                                                                                                                      0;
```

```
Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                   Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90.:
                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                           Issued_Patents_AA:*

1: /cgn2_6/ptodata/1,

2: /cgn2_6/ptodata/1,

3: /cgn2_6/ptodata/1,

4: /cgn2_6/ptodata/1,

5: /cgn2_6/ptodata/1,

6: /cgn2_6/ptodata/1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-821-883-25
1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BLOSUM62
                                                                                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GAGGMVHHRHRSSSTRSGGG.....STFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     April 28, 2003, 13:39:54 ; Search time 6.35033 Seconds
 Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                        /cgn2_6/ptodata/1/laa/5A_COMB.pep:*
/cgn2_6/ptodata/1/laa/5B_COMB.pep:*
/cgn2_6/ptodata/1/laa/6A_COMB.pep:*
/cgn2_6/ptodata/1/laa/6A_COMB.pep:*
/cgn2_6/ptodata/1/laa/6A_COMB.pep:*
/cgn2_6/ptodata/1/laa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                         Length DB
Gapext 0.5
                 US-08-467-083-68
US-08-416-41178-68
US-08-466-3458-68
US-08-625-101-2
US-08-466-5458-68
US-08-466-6808-68
US-08-466-6808-68
US-08-484-438-7
US-08-484-438-7
US-08-484-438-6
US-08-486-6478-4
US-08-237-4018-4
US-08-237-4018-4
US-08-237-4018-4
US-08-317-3108-64
US-08-317-3108-64
US-08-323-735-2
US-08-931-3108-64
                                                                                                                                                                                                                                                                                                                         ij
                                                                                                                                                                                                                                                              US-08-486-348A-69
US-08-468-545B-69
US-08-466-680B-69
                                                                                                                                                                                                                                                                                                 US-08-414-417B-69
                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (without alignments)
1005.423 Million cell updates/sec
        Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                  sequence
sequence
sequence
sequence
sequence
sequence
                                                                                                                                                                                                       Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                       Description
Sequence
                                                                                                                                                                                                                                                                                                 Sequence
                    2, Appli
6, Appli
2, Appli
2, Appli
2, Appli
1, Appli
                                                                                     8, Appli
7, Appli
4, Appli
6, Appli
2, Appli
4, Appli
4, Appli
64, Appli
                                                                                                                                                                                                       2, Appli
68, Appl
                                                                                                                                                                                                                             68, Appl
                                                                                                                                                                                            Appli
          밁
                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 1
US-08-414-417B-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 69, Application US/08414417B Patent No. 5801005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Cheever, Martin A. APPLICANT: Disis, Mary L.
          363
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
108.5	109.5	109.5	109.5	109.5	109.5	110	110	110	111	111	111	113.5	113.5	114	114	114	114
9.2	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.4	9.4	9.4	9.6	9.6	9.6	9.6	9.6	9.6
214	1706	1706	1706	1706	1706	1317	1315	1185	969	696	627	3118	2972	1461	1461	1341	1341
Н	4	4	ω	N	N	ω	ω	4	4	w	4	4	4	4	4	4	4
US-08-217-327-4	US-09-528-706-2	US-09-586-472-2	US-08-516-859A-2	US-08-399-411-2	US-08-459-568-2	US-09-083-521-7	US-08-899-595-3	US-09-041-886-23	US-09-129-668-4	US-08-906-865-4	US-08-487-596-6	US-09-579-181-1	US-09-579-181-2	US-09-289-578-9	US-09-585-887-9	US-09-548-608-18	US-09-570-573-18
(O	'n	Ś	į,	to.	to.	ίΩ	ເດ	co.	'n	CO.	ιΩ	£0	ß		(A)	 	٠. دم
Sequence	sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	equence	equence	Sequence	Sequence						
4	'n	2	'n	'n	<u>ب</u>	7,	'n	23,		٠,	'n	,	'n	9	9	18,	18,
Appl1	Appl1	Appli	Appli '	Appli	Appli	Appli	Appli .	Appl	Appli :	Appli	Appli	Appli	Appli	Appli.	Appli	Appl	Appl

## ALIGNMENTS

```
;
TOPOLOGY:
US-08-414-417B-69
Query Match
Best Local S
Matches 216
                                                                                                                                                TELEFAX: (206) 682-603
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                            APPLICATION NUMBER: US/08/414
FILING DATE: 31-MAR-1995
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 9200
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: DISIS, MATY L.

TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALICNANCIES
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
CITY: S
                                                                                               TYPE: amino STRANDEDNESS:
                                                                                                                                                                                                  TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: Washington
TRY: US
98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF SEQUENCES:
               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seattle
                                                                                                                  amino acid
                                                                                                                                     580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: Seed and Berry LLP 6300 Columbia Center,
 Conservative
                                                                                 linear
                                                                                                                                                                                                  (206) 622-4900
                                                                                                                                  amino acids
                                                                                                                                                                                  682-6031
               99.6%;
                                                                                                                                                                                                                                                                                                                                                                   Release #1.0,
                                                                                                                                                                                                                                                                                                                                    US/08/414,417B
 0
                                                                                                                                                                                                                                     920010.448C2
Score 1177; DB 1;
Pred. No. 3.3e-96;
0; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                     Version #1.25
                               Length 580;
 0,
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IN WHICH THE
 0,
```

밁

543 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 579

```
밁
                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 2
US-08-486-348A-69
S
                               밁
                                                             Ş
                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뭐
                                                                                                                                                                                                                                                                                           US-08-486-348A-69
                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 69, Appli
Patent No. 5846538
                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE: (206) 622-60 TELEFAX: (206) 682-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 92
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                              363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       423
   181
                                 483
                                                                  121
                                                                                               423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            543 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/486,348A FILING DATE: 07-JUN-1995 CLASSIFICATION: 424
                                                                                                            61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Sharkey, Richard G. REGISTRATION NUMBER: 32,6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE
                                                                                                                                                                             1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                               PAARPAGATLERAKTLSPGKNGYVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                            GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                               PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                              LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                             216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seattle
                                                                                                                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/08486348A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3: Seed and Berry LLP
6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cheever, Mai
Disis, Mary
                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                   682-6031
                                                                                                                                                                                                                                          99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Release #1.0,
                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                          Score 1177;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                   920010.448C6
                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Version #1.25
                                                                                                                                                                                                                                       3.3e-96;
                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                         Length 580;
                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                              180
                                                                                              482
                                                                                                                                                              422
                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       482
                                                                                                                                                                                                                           0,
```

```
Š
                             Ş
                                                                                                                                В
                                                                                                                                                               Ş
                                                                                                                                                                                                  В
                                                                                                                                                                                                                                 S
В
                                                                р
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-468-545B-69
                                                                                                                                                                                                                                                                                                                                    US-08-468-545B-69
                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 216; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (206) 682-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 580 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
             181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                   121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                  423
                                                                                                                                                                                                  363 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                 61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/0 FILING DATE: 06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER:
                                                                                                                                                                                                                                   1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                  LQSLPTHDPSPLQRYSEDPTYPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9, Application US/08468545B
5876712
                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sharkey, Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: Seed and Berry 6300 Columbia Cent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cheever,
                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (206)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , Mary
                                                                                                                                                                                                                                                                                                                                                                                                                                                  682-6031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   622-4900
                                                                                                                                                                                                                                                                                  99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IMMUNE REACTIVITY TO HER-2/neu PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HER-2/neu ONCOGENE IS
69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08/468,545B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ი</u>
                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      920010.448C5
                                                                                                                                                                                                                                                                                  Score 1177; DB 2; Pred. No. 3.3e-96;
                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Version
579
                                                                                                                                                                                                                                                                                                   Length 580;
                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                  Gaps.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IN WHICH
                                                                                               180
                                                                                                                                    482
                                                                                                                                                                                                    422
                                                                                                                                                                                                                                                                    0
```

US-08-466-680B-69

Sequence 69, Application US/08466680B Patent No. 6075122

GENERAL INFORMATION:

APPLICANT:

Cheever, Martin A. Disis, Mary L.

```
밁
                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                  US-08-467-083-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-466-680B-69
                                                                                                                                                                                              Sequence 68
Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (206) 682-603
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                               APPLICANT: D1sis, Mary L.
TITLE OF INVENTION: IMMUN
TITLE OF INVENTION: FOR D
TITLE OF INVENTION: HER-2
                                                                 CORRESPONDENCE ADDRESS
                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 92
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF
                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                   181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                    483
                                                                                                                                                                                                                                                                                                                                                                                                                                     423
                                                                                                                                                                                                                                                                                                  543 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 06-JUN-1995
CLASSIFICATION: 424
                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: FILING DATE: 06-JUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM:
                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GAGGMYHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                     572602
                                                                                                                                                                                                                                                                                                                                                                    PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 542
                                                                                                                                                                                                                                                                                                                                                                                                                                  LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 422
                                                                                                                                                                                                                                                                                                                                                                                     PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98104-7092
                   Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sharkey, Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCES:
Washington
                                                                                                                                                                                                                 Application US/08467083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  580 amino acids
                                E: Seed and Berry
6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6300 Columbia
                                                                                                                                                               Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seed and Berry LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  682-6031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IMMUNE REACTIVITY TO HER-2/neu PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE HER-2/neu ONCOGENE IS ASSOCIATED 69
                                                                                               IMMUNE REACTIVITY TO HER-2/NEU PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES HER-2/NEU ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  32,629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/466,680B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    69:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    920010.448C4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1177; DB 3; pred. No. 3.3e-96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       701 Fifth Avenue
                                701 Fifth Avenue
                                                                                                                                                                                                                                                                                                  579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 580;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                  IN WHICH THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                              US-08-414-417B-68
                                                                                                                                                                                                                                                                                                                                                                                                RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-467-083-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 216; Conserv
                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                              Patent No.
                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                    APPLICANT: Cheever,
APPLICANT: DISIS, MA
TITLE OF INVENTION:
TITLE OF INVENTION:
              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
FILING DATE: 06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
CURRENT
                                                                                                                                                                                                    NUMBER OF SEQUENCES: (CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1038 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX:
                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Sharkey, Richard REGISTRATION NUMBER: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE:
                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                              e 68, AF.
No. 5801005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                    98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98104-7092
APPLICATION DATA:
                                                                                                                                                    Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               x: (206) 682-6031
3723836 SEEDANBERRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: Floppy disk
                                                                                                                                Washington
                                                                                                                                                                                                                                                                                                                                                          Application US/08414417B
                                                                                                                                                                    6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1255 amino acids
                                                                                                                  SD
                                                                                                                                                                                                                                                                                        Disis, Mary L.
                                                                                                                                                                                                                                                                                                        Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                      Seed and Berry LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99.6%;
                                                                                                                                                                                                                                      IMMUNE REACTIVITY TO HER-2/neu PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/08/467,083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 08/414,417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32,629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   920010.448C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1177; DB 1;
Pred. No. 8.5e-96;
0; Mismatches 1
                                                                                                                                                                  701 Fifth Avenue
                   Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                            IN WHICH THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1157
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 7
US-08-486-348A-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-414-417B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 68, Appli
Patent No. 5846538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (200) TELEFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 97
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 920010.448C2
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 1622-4900
TELECOMMUNICATION 622-4900
                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181 DNLYYWDODPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                        APPLICATION NUMBER: US/08/486,348A FILING DATE: 07-JUN-1995 CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                           NAME:
                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seattle
                                                                                                                                       Sharkey, Richard G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Washington
7: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sharkey, Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/08486348A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disis, Mary L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6300 Columbia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seed and Berry LLP
00 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JMBER: US/08/414,417B
31-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IMMUNE REACTIVITY TO HER-2/neu PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G
                                                                       920010.448C6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1177; DB 1;
Pred. No. 8.5e-96;
0; Mismatches 1
                                                                                                                                                                                                                                                                                                                                               Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IN WHICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-625-101-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-486-348A-68
                                                                  US-08-625-101-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Sir
Matches 216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local 9
                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2,
Best Local Similarity 99. Matches 216; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                 TELEFAX: (206) 682-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                    SUFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/625,101 FILING DATE: 01-APR-1996 CLASSIFICATION: 424 ATTORNEY/ACTION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino aci
TYPE: amino acid
                                                                                                                                                                                                                NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 92
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1218 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1038 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097
                                                                               MOLECULE TYPE:
                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1158 PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: was a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                 TOPOLOGY:
                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPOGGAAPOPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                     98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , Application US/08625101 5869445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       t: 1255 amino acids
amino acid
                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                1255 amino acids
                                                                                                                                                                                 (206)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disis, Mary L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEED and BERRY LLP
                                                                                                                                                                                                  (206) 622-4900
                                                                                                                                                                                 682-6031
             99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPOUNDS FOR ELICITING OR ENHANCING IMMUNE REACTIVITY TO HER-2/neu PROTEIN FOR PREVENT: OR TREATMENT OF MALIGNANCIES IN WHICH THE HI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                              32,629
0
                                                                                                                                                                                                                                   920010.448C7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1177; DB 2; Pred. No. 8.5e-96;
             Score 1177; DB 2; Pred. No. 8.5e-96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
Mismatches
                               Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IN WHICH THE HER-2/neu
Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FOR PREVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                      밁
                                                                                                                        망
                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-468-545B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                  S
                                                                                                                                                                                                                                                                  US-08-468-545B-68
                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 216; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 68
                                                                                                                                                                                                                                                                                                                                TELEPHONE: (206) 622-4
TELEFAX: (206) 682-603
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                         1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1038
                                                        1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1098
                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 92
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
NUMBER OF SEQUENCES: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Cheever, Mar
APPLICANT: Disis, Mary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 6300 CCITY: Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Sharkey, Richard G. REGISTRATION NUMBER: 32,629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/O
FILING DATE: 06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                          1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                     LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOSLPTHDPSPLQRXSEDPTVPLPSETDGYVAPLTCSPQPEXVNQPDVRQQPPSPREGPL
                  PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                        GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                    LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 1157
98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3, Application US/08468545B
5876712
                                                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Washington
                                                                                                                                                                                                                                                                                                                   1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: Seed and Berry LLP 6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                    682-6031
ID NO: 68:
                                                                                                                                                                                                                                                                                                                                                                                     622-4900
                                                                                                                                                                                                           99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/468,545B
                                                                                                                                                                                         Score 1177; DB 2;
Pred. No. 8.5e-96;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                         920010.448C5
                                                                                                                                                                                                                          Length 1255;
                                                                                                                                                                                             Indels
                                                                                                                                                                                           0;
                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                           0,
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                        Š
                                                        B
                                                                                  Ş
                                                                                                                 В
                                                                                                                                                                            밁
                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 10
US-08-356-786-2
멍
                                                                                                                                                                                                                                                                                               ; MOLECULE TYPE: protein US-08-356-786-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2, Application Patent No. 5877305
GENERAL INFORMATION:
                                                                                                                                                                                                                                      Best Local Similarity Matches 216; Conserv
                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (617)
INFORMATION FOR SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Biosynthetic Binding Protein for Cancer TITLE OF INVENTION: Marker NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
ADDRESSEE: Edmund R. Pitcher, Testa, Hurwitz, & Thibeault STREET: Exchange Place, 53 State Street
                                                                                                                                                                         1218 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                   1098
                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: CR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1158 PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 1217
                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Houston, L. L. APPLICANT: Ring, David B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Oppermann, Hermann
                            181
                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Pitcher, Edmund REGISTRATION NUMBER: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 07/8 FILING DATE: 06-FEB-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                         LENGTH:
                                                                                                                DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
               DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                      PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                         PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Boston
                                                                                                                                                                                                                                                                                                                                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/08356786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Massachusetts
                                                                                                                                                                                                                                                                                                                                                           1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                      (617)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Huston, James S.
                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IBM PC
                                                                                                                                                                                                                                                                                                                                                                                                                    (617)
                                                                                                                                                                                                                                                                                                                                                                                   7) 24-
+ 248-7100
- 10: 2:
                                                                                                                                                                                                                                                    99.6%;
99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07/831,967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/356,786
                                                                                                                                                                                                                                                                                                                                                                                                                                                              27,829
                                                                                                                                                                                                                                      <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRP-053
                                                                                                                                                                                                                                                  Score 1177; DB 2; Pred. No. 8.5e-96;
                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                  Length 1255;
                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                            1097
                                                         1217
                                                                                                                                                                                                                                   .0:
```

```
Ş
                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                             RESULT 12
US-08-484-438-8
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-466-680B-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-466-680B-68
                                                                                     Sequence 8, Application US/08484438
Patent No. 5811098
Patent No. 5811098 5780031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 68,
Patent No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (206) 682-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION: Cheeve
                                                                                                                                                                                                                       1218
                                                                                                                                                                                                                                                                                             1158
                                                                                                                                                                                                                                                                                                                                                                     1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Patentin Release #1.0, Version #1.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/466,680B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                       1038 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: (206) 622-4900
 APPLICANT
                                     APPLICANT:
                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                        181 DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                                                                              121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TILE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TILE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                      61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Sharkey, Richard G. REGISTRATION NUMBER: 32,6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                   LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 1157
                                                                                                                                                                                                                     DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 1254
                                                                                                                                                                                                                                                                                             PAARPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   607512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/08466680B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3: Seed and Berry LLP
6300 Columbia Center, 701 Fifth Avenue
Plowman, Gregory D.
Culouscou, Jean-Michel
Shoyab, Mohammed
Siegall, Clay B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disis, Mary L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cheever, Martin A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             682-6031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1177; DB 3; Pred. No. 8.5e-96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  920010.448C4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THE
```

US-08-484-438-7

Sequence 7, Applica Patent No. 5811098 Patent No. 5811098

Application US/08484438

RESULT 13

```
Вþ
                            δÃ
                                                                В
                                                                                           Ş
                                                                                                                              망
                                                                                                                                                           Š
                                                                                                                                                                                               B
                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                          US-08-484-438-8
                                                                                                                                                                                                                                                             Matches 216;
                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO: 8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Hellstr m,
APPLICANT: Hellstr m,
TITLE OF INVENTION: I
NUMBER OF SEQUENCES:
1218
                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 530 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                              1098 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 1157
                                                                                                                                                                                               1038 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 1097
                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION: NAME: Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE: New York
               181 DNLYYWDQDPPERGAPPSTFKGTPT-AENPEYLGLDVP 217
                                                                                              121 PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF 180
                                                                                                                                                             61 LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL 120
                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER: 18, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 10-NOV-1993 CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 08/323,442
FILING DATE: 14-OCT-1994
APPLICATION NUMBER: US 08/150,704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: 07-JU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: New York COUNTRY: U.S.A. ZIP: 10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                              1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (***, PENNIE OFFO ID N
                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                          amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5: (212)
(212) 8(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1155 Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hellstr m, Ingegerd
Hellstr m, Karl E.
                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                            unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pennie &
                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                           unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HER4 HUMAN RECEPTOR TYROSINE
                                                                                                                                                                                                                                                                            97.9%;
99.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US 07/981,165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/484,438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Edmonds
of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18,872
                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5624-230
                                                                                                                                                                                                                                                                           Score 1157; DB 2; Length 1255; Pred. No. 5e-94;
                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KINASE
                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                           Gaps,
```

'n

```
S
                                                                   밁
                                                                                                 ş
                                                                                                                                    В
                                                                                                                                                                  Ş
                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                              US-08-484-438-7
                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO: 7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version CURRENT APPLICATION DATA:
APPLICATION WITCHES
                                                                                                                                                                                                     1025
1177 FPKEAKPNGIFKGS-TAENAEYL 1198
                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/981,165
FILING DATE: 24-NOV-1992
CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                      1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                 191
                                                                                                    147
                                                                                                                                                                      88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 08/323,442
FILING DATE: 14-OCT-1994
APPLICATION NUMBER: US 08/150,704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 0: CLASSIFICATION:
                                                                                                                                                                                                                                       29
                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (21 TELEX: 66141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                     Local Similarity 30.5 es 62; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                    VEAFGGAVENPEYL-TPQGGAAPQPHPPPAFSPAFDNLYYWDQ-------DP------ 190
                                                                                                                                                                                                                                     SEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSET- 87
                               -PERGAPPSTFKGTPTAENPEYL 212
                                                                                                                                  DDTFL-----PVPEYINQ-SVPKRPAGSVQNPVYHNQPLNP-----APSRDPHYQD 1127
                                                                                                                                                                    -DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKD 146
                                                                                                                                                                                                     SSPSTSRTPLLSSLSATSN--NSTVACIDRNGLQSCPIKEDSFLQRYSSDPTGALTEDSI 1082
                                                               --PHSTAVGNPEYLNTVQ------PTCVNSTFDSPAHWAQKGSHQISLDNPDYQQDF 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: Pennie & Edmonds .
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                             1210 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hellstr m, Ingegerd
Hellstr m, Karl E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Culouscou,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Siegall, Clay B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shoyab, Mohammed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (212)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-NOV-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                            unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                790-9090
                                                                                                                                                                                                                                                                                       13.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HER4 HUMAN RECEPTOR TYROSINE KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gregory D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Jean-Michel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/484,438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18,872
                                                                                                                                                                                                                                                                         24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5624-230
                                                                                                                                                                                                                                                                                       Score 164; DB 2; Pred. No. 2.5e-06;
                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                         69;
                                                                                                                                                                                                                                                                                                     Length 1210;
                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                         48;
                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                         11;
```

```
δÃ
                                                                                                                            В
                                                                                                                                                        ρ
                                                                                                                                                                                        В
                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                   Qy
RESULT 15
US-08-484-438-6
                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                 US-08-475-035-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 14
US-08-475-035-4
                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4, Application US/08475035 Patent No. 5985553
                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 404/688-9880 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                               1177
                                                                                                                            1128
                                                                                                                                                                                                                                                       1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: 404/688-0770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION: NAME: Perryman, David G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn Reli
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                          1083
                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: 11
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: KING, APPLICANT: KRAUS APPLICANT: AARON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION:
                                                                                                                                                           147
                                                                                           191 -PERGAPPSTFKGTPTAENPEYL 212
                                                                                                                                                                                                                        88
                                                                                                                                                                                                                                                                                                                   Local Similarity hes 62; Conserv
                                                                                                                                                                                                                                                                                   29 SEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSET- 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/
FILING DATE: 7 Jun 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
COETMANDE: PC-COTTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                              FPKEAKPNGIFKGS-TAENAEYL 1198
                                                                                                                            --PHSTAVGNPEYLNTVQ------PTCVNSTFDSPAHWAQKGSHQISLDNPDYQQDF 1176
                                                                                                                                                        VFAFGGAVENPEYL-TPQGGAAPQPHPPPAFSPAFDNLYYWDQ------
                                                                                                                                                                                          DDTFL-----APSRDPHYQD
                                                                                                                                                                                                                    -DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKD 146
                                                                                                                                                                                                                                                       SSPSTSRTPLLSSLSATSN--NSTVACIDRNGLQSCPIKEDSFLQRYSSDPTGALTEDSI 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Atlanta
                                                                                                                                                                                                                                                                                                                                                                                                                          amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Georgia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Suite 1200,
                                                                                                                                                                                                                                                                                                                                                                                                                                              1210 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KRAUS, MATTHIAS H. AARONSON, STUART A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USĂ
                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NEEDLE & ROSENBERG, P.C. ite 1200, 127 Peachtree Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                               protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C. R.
                                                                                                                                                                                                                                                                                                                                13.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HUMAN GENE RELATED TO BUT DISTINCT FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGF RECEPTOR GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/475,035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33,438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                   24;
                                                                                                                                                                                                                                                                                                                                  Score 164; DB 2; Pred. No. 2.5e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1414.656
                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                     69;
                                                                                                                                                                                                                                                                                                                                                  Length 1210;
                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                           -DP-----
                                                                                                                                                                                                                                                                                                                     48;
                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                          1127
                                                                                                                                                        190
```

11;

Sequence 6, Application US Patent No. 5811098 Patent No. 5811098 5780031

Application US/08484438

GENERAL

INFORMATION:

APPLICANT:

Plowman, Gregory D. Culouscou, Jean-Michel Shoyab, Mohammed Siegall, Clay B.

```
Ş
                                                                                                                                                                                                                                                                                                                                        ş
Search completed: April 28, 2003, 13:43:20 Job time: 8.35033 secs
                                                                        8
                                                                                                          Ş
                                                                                                                                                   밁
                                                                                                                                                                                     S
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TOPOLOGY: 11;
; MOLECULE TYPE:
US-08-484-438-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 13.3%; Score 157; DB 2; Length 541; Best Local Similarity 24.2%; Pred. No. 3.9e-06; Matches 62; Conservative 23; Mismatches 75; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 541 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Rel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 530
PRIOR APPLICATION DATA:
                                                                        503 QNGRIRPIVAENPEYL 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
                                                                                                                                                 443 NTFANTLGKAEYLKNNILSMPEKAKKAFDNPDYWNHSLPPRSTLQHPDYLQEYSTKYFYK 502
                                                                                                                                                                                                                        409 -----KNGDLQ------ALDNPEYHNASNG-----PPKAEDEYVNEPLYL
                                                                                                                                                                                                                                                          127 GATLERAKTLSPGKNGYVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPA------
                                                                                                                                                                                                                                                                                                 360 RYSADPTVFAPERSPRGELDEEGYMTPMRDKPKQEYLNPVE-----ENPFVSRR-- 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 530
RIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/981,165
FILING DATE: 24 NOV-1992
                                                                                                                                                                                                                                                                                                                                                                            300 RDGGFAAEQGVSVPYRAPTSTIPEAPVAQGATAEIFDDSCCNGTLRKPVAPHVQEDSSTQ 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
                                                                                                                                                                                                                                                                                                                                      74 RYSEDPTVPLPS-----ETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPA 126
                                                                                                                                                                                                                                                                                                                                                                                                                 16 RSGGGDLTLGLE-PSEEEAPRSPLAP-SEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQ 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER: 18,8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAPPLICATION. NUMBER: 00,
APPLICATION NUMBER: 00,
APPLICATION NUMBER: 00,
APPLICATION NUMBER: 00,
APPLICATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/0 FILING DATE: 07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hellstr m, Ingegerd
Hellstr m, Karl E.
                                                                                                            --AENPEYL 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HER4 HUMAN RECEPTOR TYROSINE KINASE 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/484,438
                                                                                                                                                                                     ---FSPAFDNLYYWDQDPPERGA--PPSTFKGTPT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5624-230
                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                     96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                       205
                                                                                                                                                                                                                                                              175
                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                           1026
                             136
135.5
134.5
                                                                 1026.5
961
966
894.5
165.5
144.5
144.5
144.5
144.5
                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPTREMBL_21:*
1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
                                                                                                                                                                                                        Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-821-883-25
1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            April 28, 2003, 13:37:49 ; Search time 14.515 Seconds (without alignments) 3080.404 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  671580 seqs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GAGGMVHHRHRSSSTRSGGG.....STFKGTPTAENPEYLGLDVP 217
      86.8
81.3
75.6.6
75.7
112.2
112.2
112.2
111.8
111.5
111.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                             sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                             sp_organelle:*
sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                             sp_rodent:*
sp_virus:*
sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_invertebrate: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_human:*
                                                                                                                                                                                                                                                                                                                                                                   sp_unclassified:*
                                                                                                                                                                                                                                                                                                                                                                                                                   sp_plant:*
                                                                                                                                                                                                                  Length DB
      1259
367
165
4162
1137
1137
420
446
1209
585
358
438
1217
379
309
   018735
018726
014256
028WYV0
09W6F6
08SZ47
09VZC2
09VZC2
041935
008805
008805
009E998
016038
016038
016038
016038
                                                                                                                                                                                                                    H
                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          671580
O18735 canis famil
Q8872x1 mus musculu
Q14256 homo sapien
Q8wyv0 homo sapien
Q9w6f6 gallus gall
Q8x27 drosophila
Q9yzc2 drosophila
Q9yzc2 drosophila
Q9yz70 rattus norv
Q41935 murid herpe
Q08805 homo sapien
Q39495 cylindrothe
Q39495 cylindrothe
Q9ep98 mus musculu
Q16038 homo sapien
Q91810 xenopus lae
Q18751 caenorhabdi
Q00599 homo sapien
                                                                                                                                                                                                                 Description
```

	45	44	43	42	41	40	39	38	37	3 6	<u>3</u> 5	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
•	126	126	126.5	126.5	127	127	127.5	127.5	127.5	127.5	128	129	129.5	129.5	130	130	130	130.5	130.5	130.5	131	131.5	132.5	132.5	132.5	132.5	133.5	133.5	134
	10.7	10.7	10.7	10.7	10.7	10.7	10.8	10.8	10.8	10.8	10.8	10.9	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.1	11.1	11.2	11.2	11.2	11.2	11.3	11.3	11.3
	990	562	734	356	763	369	3179	955	594	551	889	440	1620	476	3342	3325	847	2135	2135	1480	903	473	584	487	442	322	530	440	674
	4	16	11	12	2	10	12	10	13	13	16	4	11	տ	12	12	10	4	4	4	4	10	16	11	10	10	11	4	10
	Q9UG03	Q92JX1	088970	Q9Q0B5	Q9XDH2	Q40692	Q8V2A4	Q94F92	Q9DF69	013003	Q9F2N5	QBTF74	Q8VI59	Q9XTT6	Q9E6N3	Q9IBT9	Q9XIB6	Q9UIV7	043157	Q96Q04	Q9UPX1	Q39620	Q9FCJ3	Q8VDA4	Q39494	Q09084	008934	Q8TE44	065672
	Q9ug03 homo sapien	Q92jx1 rhizobium m		Q9q0b5 herpes simp	-	Q40692 oryza sativ			gallus		Q9f2n5 streptomyce	Q8tf74 homo sapien	Q8v159 mus musculu	Q9xtt6 caenorhabd1	turkey	Q9ibt9 turkey herp	Q9x1b6 arabidopsis	homo	O43157 homo sapien		Q9upx1 homo sapien	.039620 chlamydomon	. Q9fcj3 streptomyce					Q8te44 homo sapien	O65672 arabidopsis

## ALIGNMENTS

Вþ

Š

밁 5

õ 밁 Š

밁

J.

```
DEREXULT DEREXULT ID DEREXULT ID OR SELECT OF COLUMN ACCORDANCE OF COLUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                   Q14256;
01-NOV-1996
01-NOV-1996
01-DEC-2001
                                                        C-erb B2/neu
C-ERB B2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Strausberg RR.;
Submitted (APR-2002) to the EMBL; BC027080; AAH27080.1;
Hypothetical protein.
SEQUENCE 367 AA; 40163 MW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hypothetical 40.2 kDa protein.
Mus musculus (Mouse).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; I
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1157
                                                                                                                                                                                                                                   Q14256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q8R2X1
     Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2002
01-JUN-2002
                                      E O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28R2X1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             176
                                                                                                                                                                                                                                                                                                                                                                                 330
                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Si
hes 178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
     sapiens (Human
ryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                            DNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                              DNLYYWDQNSSEQGPPPSTFEGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LQSLSPHDLSPLQRYSEDPTLPLPPETDGYVAPLACSPQPEYVNQPEVRPQSPLTPEGPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PPIRPAGATLERPKTLSPGKNGVVKDVFAFGGAVENPEYLAPRAGTASQPHPSPAFSPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FSPAFDNLYYWDQDPSERGSPPSTFEGTPTAENPEYLGLDVP 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PPSRPAGATLERPKTLSPKTLSPGKNGVVKDVFAFGSAVENPEYLAPRGRAAPQPHPPPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAARPAGATLER-----AKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQPHPPPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGGTAHRRHRSSSTRNGGGELTLGLEPSEEEPPKSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                  6 (TrEMBLrel. 01, 06 (TrEMBLrel. 01, 16 (TrEMBLrel. 19, 17 (TrEMBLrel. 19, 17 (Fragme)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrembLrel. 21, Created)
(TrembLrel. 21, Last sequence update)
(TrembLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                   PRELIMINARY;
                             (Human)
  Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       40163 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81.3%;
82.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86.8%;
                                                                                  (Fragment).
                                                                                                          Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 961; DB 11;
Pred. No. 1.2e-64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 5.9e-69;
                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
  Craniata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OBE03395F9E101B0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          367
                                                                                                                                                                                                                                   165
     Vertebrata;
                                                                                                                                                                                                                                   ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                              366
                                                                                                                                                                                                                                                                                                                                                                                                                                 217
                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
     Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               367;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
Q8WYV0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                SQUED DR RETTER TO SOLUTION OF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 76.6%;
Best Local Similarity 100.0%;
Matches 165; Conservative (
                                                                                                                                                                                                                                                     "Novel human cDNA clones with function of inhi growth.";
submitted (NOV-2000) to the EMBL/GenBank/DDBJ EMBL; Ar318349; AAL55856.1; ...
InterPro; IPR002048; EF-hand.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR001245; Ty_pkinase.
InterPro; IPR004019; YLP_motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M95
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE-86070181; PubMed-2999974;
COUSSENS L., Yang-Yeng T.L., Liao Y.C., Chen E.
Seeburg P.H., Libermann T.A., Schlessinger J.,
Levinson A., Ullrich A.;
"Tyrosine kinase receptor with extensive homolo
shares chromosomal location with neu oncogene.'
Science 230:1132-1139(1985).
                                                                               Pfam; PF00069; pkinase; 1.

Pfam; PF02757; YLP; 2.

ProDom; PD000001; Euk_pkinase; 1.

SMART; SM00219; TYrKC; 1.

PROSITE; PS00018; EF_HAND; UNKNOWN_1.

PROSITE; PS50011; PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAR-2002 (TYEMBLYEL. 20, Created)
01-MAR-2002 (TYEMBLYEL. 20, Last sequence update)
01-JUN-2002 (TYEMBLYEL. 21, Last annotation updat
Hypothetical 44.7 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.

MEDLINE-94000386; PubMed-8104414;

Sarkar F.H., Ball D.E., Li Y.W., Crissman J.D.;

"Molecular cloning and sequencing of an intron of the control of th
                                Hypothetical protein SEQUENCE 412 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Huang Y., Zhou X.M.,
Wan D.F., Gu J.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q8WYV0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q8WYV0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA Cell Biol. 12:611-615(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NQPDVRPQPPSPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  M95667; AAC37531.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             165 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chordata;
Primates;
                                44702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17327 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zhang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     76.6%;
                                MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 906;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                034397FF3F27D2BC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A0C113BA308BF46B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Jiang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of an intron of Her-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      H.Q.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6.7e-61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                homology
oqene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              inhibiting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J., Francke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gray A., McGrath rancke U.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ψ. x.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        င
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            208
                                                                                                                                                                                                                                                                                                                                                                                                                                                              cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EGF receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zhao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ERBB2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

Gaps

0

163 60 103

밁 δÃ 밁 õ 밁 Ş

á

밁

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 181;
                                                                                                                                                                                                                                                                                                                         Gallus gallus (Chicken).
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Neoqnathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                         PROSITE;
                                                                                        PRINTS; PRO0109; TYRKINASE.
Proboms, PD000001; Euk_pkinase;
SMART; SM00261; FU; 3.
SMART; SM00219; TyrKc; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                    Q9W6F6
                                                                                                                                                                                                                                     embryonic chick hindbrain.";

Neurosci. 13:237-258(1999).
                                                                                                                                                                                                                                                                                                                                                                     Receptor tyrosine kinase
                                                                                                                                                                                                                                                                                                                                                                                                          Q9W6F6;
                                                       PROSITE;
                                                               PROSITE;
                                                                                                                                                                                                                                                                    Dixon M., Lumsden A.;
                                                                                                                                                                                                                                                                                      FISSUE-HINDBRAIN;
                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                          efam;
                                                                                                                                                                 InterPro; IPR001245; Tyr_pkinase
InterPro; IPR004019; YLP_mot1f.
                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                        HSSP;
                                                                                                                                                                                                                                                       "Distribution of neuregulin-1 (nrg1) and
                                                                                                                                                                                                                                                                            MEDLINE-99263203;
                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                150
                                                                                                                                                                                                                                                                                                                                                                                                                                      s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQP-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGIKRWEGPPTTSRGTCHARN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----GAPPSTFKGTPTAEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTSITGTRTHQSGGLHPAPSKGHLRQRTQSTWVWTCQCEPEGQVRRSPDVSSGSREGLTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGGMVHHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKG
                                                                                                                              PF02757;
                                                                                                                                    PF00069; pkinase; 1.
PF01030; Recep_L_domain;
                                                                                                                                                        PF00757; Furin-like; 1.
                                                                                                                                                                                                                        P11362; 1FGK
                                                                                                                                                                                                                                AF121963; AAD31764.1;
                                            Tyrosine-protein kinase
                                                             PS00107; PROTEIN_KINASE_ATP;
PS50011; PROTEIN_KINASE_DOM;
PS00109; PROTEIN_KINASE_TYR;
                                                     PS00652; TNFR_NGFR_1; UNKNOWN_1
                                                                                                                                                                                   IPR001368; TNFR_c6.
                                                                                                                                                                                                     IPR000719; Euk_pkinase
                                                                                                                                                                                            IPR002174; Furin-like.
                                                                                                                                                                                                            IPR000494; EGFR_L_domain
                          1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                              YLP;
                           ₽
                                                                                                                                                                                                                                                                            PubMed=10328884;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           75.7%;
69.3%;
14.0%;
26.7%;
                           127927
                                                                                                                                                                                                                                                                                                                                                                     (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 208
                           WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 894.5; DB 4 Pred. No. 1.4e-59;
                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                           4D616436F87DC84F CRC64;
165.
No.
0.00024;
                                                                                                                                                                                                                                                          erbB4
                                                                                                                                                                                                                                                                                                                                                                                                                   ₹
         13;
                                                                                                                                                                                                                                                          transcripts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
         Length
                                                                                                                                                                                                                                                          in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4.
                                                                                        δÃ
                                                                                                            밁
                                                                                                                            δÃ
                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                       В
                                                                                                                                                              δÃ
                                                                                                                                                                                  밁
                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                          SQREAR REAL SQREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QY
```

```
RESULT 7
Q9VZC2
ID Q9VZ
AC Q9VZ
DT 01-M
DT 01-M
                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
Q9VZC2;
01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-2002
01-JUN-2002
01-JUN-2002
RE17165p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Stapleton M., Brokstein P., Hong L., Agbayani A., Carlson J., Champe M., Chavez C., Dorsett V., Dresnek D., Farfan D., Frise E., George R., Gonzalez M., Guarin H., Krommiller B., Li P., Liao G., Miranda A., Mungall C.J., Nunco J., Pacleb J., Paragas V., Park S., Patel S., Phouanenavong S., Wan K., Yu C., Lewis S.E., Rubin G.M.,
                                                   Q9VZC2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases EMBL; AY071124; AAL48746.1; -. SEQUENCE 420 AA; 42947 MW; 96D62FFDC9F996E1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q8SZ47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Celniker S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CG15021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q8SZ47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                           186
                                                                                                                                                                            200
                                                                                                                                                                                                                 138
                                                                                                                                                                                                                                                  144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    958
                                                                                                                                                                                                                                                                                                                       86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16
                                                                                                                                                                                                                                                                                      91
                                                                                                                                                                                                                                                                                                                                                          37
                                                                                                                                                                                                                                                                                                                                                                                            34 PRSPLAPSEGAGSDVFDGDLGMGAAKGL-----QSLPTHDPSPLQRYSEDPTVPLPS
                                                                                                                                            QPG----
                                                                                                                                                                            FKGTPTAENPEYLGLDVP 217
                                                                                                                                                                                                                                                 VKDVFAFGGAVENPEYLTPOGGAAPQPHPPPAFSPAFDNLYYWDQDP----PERGAPPST 199
                                                                                                                                                                                                                                                                                                                       ETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGP--LPAARPAGATLERAKTLSPGKNGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KKAFDNPDYWNHSLPPRSTLQHPDYLQEYSTKYFYKQNGRIRPIVAENPEYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAGATLERAKTLSPGKNGVVKDVF------AFGGAVENPEYLTPQGGAAPQPHPPPAF 176
| :| :| | :| | :| | :| |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QRYSADPTVFIPERVIRGELDEDGYMTPMRDKPKTDYLNPVEENPFVSRRKNGDLQAVDN 1017.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QRYSEDPTVPLPS-----ETDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAA-R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RDGGYAAEQGV-PMPYRAPGCIIPEAPVAQGATAEIFEDTCCNGTLRKQVATLAKEDSST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RSGGGDLTLGLEPSEEEAPRS - - PLAP - SEGAGSDVFDGDLGMGAAKGLQSLPTHDPSPL
                                                                                                                                                                                                                                                                                    PS--YGPPQTQPPRPPPQPTPSA-PAPPPPSYGPPQTPPPRPPPQPTPSA
                                                                                                                                                                                                                                                                                                                                                          PSVPF-PPPGSGNGIEDSGIGPGPAPSAPAPSYGPPQTRPPPPPPPPQ-----PTPPAPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPAFDNLYYWDQDPPERGA--PPSTFKGTPT-----AENPEYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEYHN-----APNGQPKAEDEYVNEPLYLNTFANTLENAEYL------KNNLPEKA 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62;
                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity 28.8
57; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ? (TrEMBLrel.
? (TrEMBLrel.
? (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                   PRELIMINARY;
                                                                                                                                           PEYLPPDQP
                                                                                                                                                                                                             PAPPPSYGPPQ---TPPPPRPPPQPTPSAPAPSYGPPQPPAPQPPSPPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                              12.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21,
21,
21,
                                                                                                                                            197
                                                                                                                                                                                                                                                                                                                                                                                                                                 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 144.5;
                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                 NO.
                                                   446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                 .003;
                                                   ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92;
                                                                                                                                                                                                                                                                                                                                                                                                                                 79;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 420;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             212
                                                                                                                                                                                                                                                                                                                                                                                                                               51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                            85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           957
                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                          90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . .
                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10
```

(TrEMBLiel.

13, 13,

Created)
Last sequence update)

17,

Last annotation update)

```
밁
                                                                       õ
                                                                                                                                                      밁
                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Adostin D. Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
Alasko P., Lei Y., Levisky A.A., I.J., Wei M.-H., Ibegwam C.,
Alasko P., Lei Y., Levisky A.A., I.J., Li Z., Kulp D., Lai Z.,
Alasko P., Lei Y., Levisky A.A., I.J., Li Z., Liang Y., Lin X.,
Allu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
Allu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
Alasko P., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
Alasko P., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
Alasko P., Lei Y., Levisky A.A., I.J., Li Z., Liang Y., Lin X.,
Alasko P., Lei Y., Levisky A.A., I.J., Li Z., Liang Y., Lin X.,
Alasko P., Lei Y., Levisky A.A., I.J., Li Z., Liang Y., McSherson D.,
Alasko P., McLeod M.P., McIntosh T.C., McLeod M.P., McSherson D.,
Alasko P., Nelson R., Simpson M., Skupski M.P., Smith T.,
Alasko D.R., McIntosh K., Saunders R.D.C., Scheeler F., Shen H.,
Alasko P., Siden-Klamos I., Simpson M., Skupski M.P., Smith T.,
Alasko P., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
Alasko P., Wassarman D.A., Weinstock G.M., Weissenbach J.,
Alasko P., Wassarman D.A., Weinstock G.M., Wang S., Yao Q.A.,
Yeh R., F., Zhong W., Zhong W., Zhang G., Zhao Q., Zheng L.,
Alasko P., Wassarman P., Worley K.C., Win D., Yang S., Yao Q.A.,
Yeh R., F., Nong F.N., Zhong W., Zhong W., Zhong S., Zhu X., Smith H.O.,
Alasko P., Wassarman P., Wang S., Yao Q., Zheng L.,
Alasko
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.
Beceson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
Beceson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn
Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fielschmann
Fosler C., Gabriellan A.E., Garg N.S., Gelbart W.M., Glasser K.,
Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
Harris N.L., Harvey D., Helman T., Hernandez J.R., Houck J.,
"""" Harvey D., Helman T., Harian M., Houck J.,
""" Honyam C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPRO03882; Pistil_extensin.
InterPro; IPRO02965; P_rich_extensn.
PRINTS; PRO1217; PRICHETTENSN.
PRINTS; PRO1218; PSTLEXTENSIN.
SEQUENCE 446 AA; 45728 MW; A2C9CE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Sutton R.G., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Programment R.G., Programment R.G., Champe M., Pfeiffer B.D., Programment R.G., Programment R.G., Programment R.G., Champe M., Pfeiffer B.D., Programment R.G., Programment R.G., Champe M., Pfeiffer B.D., Programment R.G., Programment R.G., Programment R.G., Programment R.G., Champe M., Pfeiffer B.D., Programment R.G., Progra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (Fruit fly).
Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Eukaryota; Neoptera; Endopterygota; Diptera; Brachycera; MuscEphydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUN-2001 (TrEMBLrel. CG15021 protein. CG15021.
                                                                                                                                                      117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM'N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=7227;
       164
                                                                               144
                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                       34 PRSPLAPSEGAGSDVFDGDLGMGAAKGL-----
                                                                   VKDVFAFGGAVENPEYLTPQGGAAPQPHPPPAFSPAFDNLYYWDQDP----PERGAPPST
                                                                                                                                                                                                                             ETDGYVAPLTCSPOPEYVNQPDVRPQPPSPREGP--LPAARPAGATLERAKTLSPGKNGV
                                                                                                                                                                                                                                                                                                        PSVPF-PPPGSGNGIEDSGIGPGPAPSAPAPSYGPPQTRPPPPPPPPPQ-----PTPPAPR 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
57; Conserv
                                                                                                                                                  -YGPPQTQPPRPPPQPTPSA-PAPPPPSYGPPQTPPPRPPPQPTPSA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=10731132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12.2%;
28.8%;
-TPPPRPPPQPTPSAPAPSYGPPQPQPPAPQPPSPPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 144.5; DB 5;
Pred. No. 0.0032;
1; Mismatches 79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A2C9CE02A07F0542 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                   -QSLPTHDPSPLQRYSEDPTVPLPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fleischmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Reese M.G.,
Shen H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zheng L.,
Smith H.O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dunn
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ×. A.,
                                                                           199
                                                                                                                                                  163
                                                                                                                                                                                                                             143
                                                                                                                                                                                                                                                                                                                                                                                   85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ∑ '⊽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
```

```
Š
                                                                       Ş
                                                                                                   В
밁
                                                 망
                                                                                                                           Ş
                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                       Matches
                                                                                                                                                                             Query Match
                                                                                                                                                                                                                 PRINTS; PRO0109; TYRKINASE.
PRODOM; PD000001; Euk_pkinase; 1.
SMART; SM00261; EU; 3.
SMART; SM002619; TYIKC; 1.
SMART; SM00219; TYIKC; 1.
PROSITE: PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00101; PROTEIN_KINASE_TYR; 1.
PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
ATP-binding; Receptor; Transferase; Tyrosia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N
STRAIN-FISHER; 'Petch L.A.;
                                                                                                    1010
                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN-FISHER; TISSUE-LIVER;
Guttridge K., Dawson T.L., E
Submitted (NOV-1999) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN-FISHER; TISSUE-LIVER;
MEDLINE-90258888; PubMed-234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus norvegicus (Rat),
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9QX70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "A truncated, secreted form of the epidermal growth factor receptor encoded by an alternatively spliced transcript in normal rat tissue Mol. Cell. Biol. 10:2973-2982(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAY-2000 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
Epidermal growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; M37394; AAF14008.1;
HSSP; P11362; 1FGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (NOV-1991) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9QX70;
                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002174;
InterPro; IPR001245;
                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000719;
                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Earp H.S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Petch L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     212 QPG-----PEYLPPDQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                          77
                                                                                                                            47 DVFDGDLGMGAAKGLQSLPTHDPSP------
                                                                                                                                                                   Local
             TLSPGKNGVVKDVFAFGGAVENPEYL-TPQGGAAPQPHPPPAFSPAFDNLYYWDQ----- 188
                                                                EDPTVPLPSET--DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAK 134
                                                                                                   DVVDADEYLIPQQGFFNSPSTSRTPLLSSLSANSNSSTVACINRNGSCRVKEDAFLQRYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FKGTPTAENPEYLGLDVP
                                                 SDPTSVLTEDNIDDTFL-----PVPEYINQ-SVPKRPAGSVQNPVYHNQPLHP-----
                                                                                                                                                                                                                                                                                                                    PF00069; pkinase; 1.
PF01030; Recep_L_domain;
                                                                                                                                                                                                                                                                                                                                            PF00757; Furin-like; 1.
                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A., Harris
                                                                                                                                                                                                      1209 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TremBLrel. 13, Creat
(TremBLrel. 13, Last
(TremBLrel. 21, Last
rowth factor receptor.
                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N.A.; TISSUE-LIVER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed-2342466;
s J., Raymond V.W.,
                                                                                                                                                                 12.2%;
                                                                                                                                                                                                        134891 MW;
                                                                                                                                                                                                                                                                                                                                                            Tyr_pkinase
                                                                                                                                                                                                                                                                                                                                                                        Euk_pkinase.
Furin-like.
                                                                                                                                                                                                                                                                                                                                                                                                EGFR_L_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              217
                                                                                                                                                     22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Earp
                                                                                                                                                                                                                                                                                                                                                                                                                                    Earp H.S.;
EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                 Score 144;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                       Mismatches
                                                                                                                                                                                                      se; Tyrosine-protein kinase 96FEE7F6CC1B7773 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Blasband
                                                                                                                                                                   .011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ŗ
                                                                                                                                                                             DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                     databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A.J.,
                                                                                                                                                                             Length 1209;
                                                                                                                                                       Indels
                                                                                                                            ----LQRYS
                                                                                                                                                       76;
                                                                                                                                                    Gaps
                                                                                                    1069
                                                 1116
                                                                                                                            76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . . . .
81 . .
                                                                                                                                                     11;
                                                                                                                                                                                                                                                                                                                                                                                                    .
```

Ş

189

```
RESULT
041935
1D 274
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 20
10 
  RESULT 10
Q08805
ID Q0880
AC Q0880
DT Q1-NC
DT Q1-DE
DE PRBIL
GN PRBIL
GN PRBIL
OS HOMO
OC ELKEN
OC Mamma
OX NCBI_
RN [1]
RP SEQUE
RX MEDLI
                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                041935;
01-JAN-1998
01-JAN-1998
                                                                                                                                                                                                                                                  Q08805;
Q08805;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1164
                                                                                                                                                           01-NOV-1996 (TrEMBLrel 01, 01-NOV-1996 (TrEMBLrel 01, 01-DEC-2001 (TrEMBLrel 19, Poppir protein (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Latreille P., Wamsley P., Wassubmitted (APR-1997) to the:
EMBL; U97553; AAB66392.1; -.
Hypothetical protein.
SEQUENCE 585 AA; 60160 MW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             murid herpesvirus 4.
Viruses; dsDNA viruses,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hypothetical GAMMAHV.M6.
                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
SEQUENCE FROM N.A. MEDLINE-93304421;
                                                                                          PRB1L.
Homo sapiens (Human).
Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Virgin H.W. IV, Latreille P.,
Dal Canto A.J., Speck S.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    041935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-WUMS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-97366649; PubMed-9223479;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=33708;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gammaherpesvirinae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'Complete
                                                                                                                                                                                                                                                                                                                                                                             359
                                                                                                                                                                                                                                                                                                                                                                                                                      183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Virol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQ-PHPPPAFSPAFDN------
                                                                                                                                                                                                                                                                                                                                                                           AGARIPDLPGPLPSWGPDPRPPRPPPELGPGSPTSPAPSRAGARIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                IPDL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ELGPGSP--TSPAPSRAGARIPDLPGPLPSWGPDPRPPPPPELGPGSPTSPAPSRAGAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TDGYVAPLTCSPQPEYVNQ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PSWGPDPRPPRPPPELGPGSPTSPAPSRAGA----RIPDL-PGPLPSWGPDPRPPRPPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PSEEEAPRSPLAPSE-GAGSDVFDGDLGMGAAKGLQSLPTHDPSPLQRYSEDPTVPLPSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 26.9
50; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              71:5894-5904(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. 05, Last (TrEMBLrel. 14, Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel.
                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                PGP---
                                                                                                                                                                                                                                                                                                                                                                                                                    ---LYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              kDa
  PubMed-8317492;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and genomic analysis
                                                                                  Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60160 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Waterston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last annotation
                                                                                                                                                                                   Created)
Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 140; DB 12
Pred. No. 0.0094;
8; Mismatches 9
                                                                                Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wamsley
                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            85610AA80C34827D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---PDVRPQPPSPREGP----LPAARPAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             --LPSWGPDPRPPRPPPELGPGSPTSPAPSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R.H.;
                                                                                                                                                                                                                                                                        358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۳.
'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Herpesviridae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of.
                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                  Hominidae;
                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hallsworth K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       murine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12;
                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gammaherpesvirus
                                                                                                     Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                             404
                                                                                                                                                                                                                                                                                                                                                                                                                    217
                                                                                  Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 585;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Weck K.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1:29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
```

```
Ş
                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
Q39495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                  Q
                                                                                    В
                                                                                                                           Š
                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCOORDITE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SQ FR RT RA
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local s
Matches 59
                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                             Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eur. J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cylindrotheca fusiformis (Marine diatom).
Eukaryota; stramenopiles; Bacillariophyta; Bacillariophyceae;
Bacillariophycidae; Bacillariales; Bacillariaceae; Cylindrotheca.
NCBI_TaxID=2853;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1996 (TrEMBLrel.
01-NOV-1996 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Azen E.A., Latreille P., Niece R.L.;
"PRBI gene variants coding for length and null po
human salivary Ps, PmF, PmS, and Pe proline-rich
Am. J. Hum. Genet. 53:264-278(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE-96314479;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q39495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  diatom cell walls."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FRU ALPHA 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q39495;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Frustulins:Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kroeger N.,
                                                                                      215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    107
275
                                           156
                                                                                                                                118
                                                                                                                                                                           168
                                                                                                                                                                                                                                                                108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         198 GPPPPPGKP-----QGPPQQGGNRPQGPPPPGKPQGPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11
                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                  34 PRSPLAPSEG-----AGSDVF----DGDLGMGAAKGLQS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pha 2 frustulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                           Loca1
                                                                                    ---LPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQP----PSPRE 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----PPPQGDKSQSPRSP-PGKPQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KSRSPRSPPGK-PQGPPPQGGNQPQGPPPPPGKPQGPPPQGGNKPQGPPPPGKPQG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RSSSTRSGGGDLTLGLEPSEEEAPRSPLAP---SEG---AGSDVFDGDLGMGAAKGLQSL
  RSRTDYCIKENPSTPPPTPPPAPAP
                                         -- NPEYLTPQGGAAPQPHPPPAFSP
                                                                                                                             GPLPAARPAG----
                                                                                                                                                                                                                                                                PGVPLERCEGDCDSDSECASSDLFCFPRNDDVVVPGCRGQSDDSKFDYCIRRVDAPPGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PHPPPAFSPAFDNLYYWDQDPPERGA-----PPSTFKGTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NKPQGPPPPGKPQGPPPQGDKSQSPRSPPGK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPREGPLPAARPAGATLERAKTLS----PGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPP-------
                                                                                                                                                                           APTVPTADPSP-----DPT-PDPSPDP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S62941; AAB27289.1; -.
ER 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                             J. Biochem. 239:259-264(1996).
x99327; CAA67702.1; -.
                                                                                                                                                                                                                                                                                                                                                    1 Similarity
57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ch 11.6%; similarity 26.6%; 59; Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                         438 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     358 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14479; PubMed-8706728;
Bergsdorf C., Sumper M.;
Domain conversation in a
                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                           45947 MW; 3F894F5033634B03 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35050 MW;
                                                                                                                                -ATLERAKTLSPG-----KNGVV---KDV----FAFGGAVE
                                                                                                                                                                                                                                                                                                                                                                      11.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19,
01,
10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17;
                                                                                                                                                                                                                                                                                                                                                    20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence up
Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 137.5;
Pred. No. 0.00
17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                         Score 136.5;
Pred. No. 0.
                                         178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB7F87B8D5EA759E CRC64;
                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----PPPQGGNQPQGPPPPPGKPQGFPPQGG
                                                                                                                                                                                                                                                                                                                                                                         No. 0.012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           438
                                                                                                                                                                           -TPDPSPSPVNSPTPDPTPGPTPDPTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.0084;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG
                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75;
                                                                                                                                                                                                                                                                                                                                                    55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polymorphisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PQGPPPQGGNQPQ 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sms among; (PRPs).";
                                                                                                                                                                                                                                                                                                                                                                                                438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71;
                                                                                                                                                                                                                                                                                                                                                    73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  with
                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                155
                                                                                                                                                                                                                                                                167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64
                                                                                      274
                                                                                                                                                                           214
                                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                113
                                                                                                                                                                                                                                                                                                                                                    12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
```

```
OPERADOR RESULT TO DE COMPANIO В
                                                  õ
                                                                                                             В
                                                                                                                                                            Ş
                                                                                                                                                                                                                                                 Query Match
Best Local 9
                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Operps; Operps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SMART;
SMART;
SMART;
1071
                                                                                                               1011
                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00190; CYTOCHROME_C; UNKNOWN_1.
PROSITE; PS00107; PROTEIN_KINASE_DOM; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
ATP-binding; Receptor; Transferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF01030; Recep_L_domain; PRINTS; PR00109; TYRKINASE. ProDom; PD000001; Euk_pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Reiter J.
Schehl C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Mammalia; Eutheria; NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9EP98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (JUN-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mouse alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-C57BL/6J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mouse alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Reiter J.L., The Sinclair C.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-C3H/101,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Maihle N.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Balasubramaniam S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MGD; MGI:95294;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Maihle N.J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3alasubramaniam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              interPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Comparative genomic sequence analysis and i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Comparative genomic
                                                       77
                                                                                                                                                                    47
SDPTGAVTEDNIDDAFL
                                                                                                          DVVDADEYLTPQQGFFNSPSTSRTPLLSSLSATSNNSTVACINRNGSCRVKEDAFLQRYS
                                                                                                                                                               DVFDGDLGMGAAKGLQSLPTHDPSP---
                                                  EDPTVPLPSET - - DGYVAPLTCSPQPEYVNQPDVRPQPPSPREGPLPAARPAGATLERAK 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00069;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SM00220; S_TKC; 1.
SM00219; TyrKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SM00261; FU;
                                                                                                                                                                                                                       Similarity 26.4
68; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .L., Threadgill D.W., Eley G.D., Str
., Pearsall R.S., Green P.J., Yee D.
amaniam S., Crossley T.O., Magnuson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR002174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR002290;
IPR001245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR0007:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR000494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (JUN-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01, 129/SVJ, AND 129/SVEVTAC;
Threadgill D.W., Eley G.D., Strunk K.E.,
Pearsall R.S., Green P.J., Yee D., Lam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Furin-like; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1FGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAG28045.1;
AAG28045.1;
AAG24386.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pkinase;
                                                                                                                                                                                                                                                                                                                                         A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAG28045.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nic sequence analysis and isolation 
Egfr transcripts encoding truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; CytC_heme_bind.
; EGFR_L_domain.
; Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sall R.S., Green P.J., Yee D.,
Crossley T.O., Magnuson T.R.,
                                                                                                                                                                                                                                                 11.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ser_thr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Furin-like.
                                                                                                                                                                                                                                                                                                                                         134840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                    23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOINED.
                                                                                                                                                                                                                                                                                                                                         MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL/GenBank/DDBJ
PVPEYVNQ-SVPKRPAGSVQNPVYHNQPLHP
                                                                                                                                                                                                                                                 Score 136; DB 11;
Pred. No. 0.043;
                                                                                                                                                                                                                       Pred. No. 0.04
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                       62CD021C9DE32E18 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , Strunk K.E., D
se D., Lampland
uson T.R., James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     isolation of human and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       truncated
                                                                                                                                                                                                                          63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                             ------LQRYS
                                                                                                                                                                                                                                                                               Length 1210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          James
                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E., Danielsen 
Lampland A.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of human and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Danielsen
d A.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,L
                                                                                                                                                                                                                          76;
                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     А. Л
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P
                                                                                                             1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ċ
                                                                                                                                                               76
                                                                                                                                                                                                                       11;
```

```
RESULT
Q91810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
Q16038
 ROCCOSEDIA
                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                 ₽
                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                  QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; SO
                               Proline rich protein.
Xenopus laevis (African clawed frog).
Xenopus laevis (African clawed frog).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Lendaryota, Metazoa; Chordata; Mesobatrachia; Pipoldea; Amphibia; Batrachia; Anura; Mesobatrachia; Pipoldea;
                                                                              01-NOV-1996 (TrEMBLrel.
01-NOV-1996 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Azen E.A., Latreille P., Niece R.L.; "PRBI gene variants coding for length and null polymorphisms among human salivary Ps, PmF, PmS, and Pe proline-rich proteins (PRPs)."; Am. J. Hum. Genet. 53:264-278(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1996
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q16038
NCBI_TaxID=8355;
[1]
                       Xenopodinae;
                                                                                                                    091810;
                                                                                                                              Q91810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-93304421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRB1M protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              189
                                                                                                                                                                                        249
                                                                                                                                                                                                              202
                                                                                                                                                                                                                                      198
                                                                                                                                                                                                                                                             170
                                                                                                                                                                                                                                                                                    154
                                                                                                                                                                                                                                                                                                           117
                                                                                                                                                                                                                                                                                                                                  107
                                                                                                                                                                                                                                                                                                                                                        65
                                                                                                                                                                                                                                                                                                                                                                                52
                                                                                                                                                                                                                                                                                                                                                                                                      1
                                                                                                                                                                                                              GTPTAE - - NPE
                                                                                                                                                                                                                                                                                                                                                                                                      RSSSTRSGGGDLTLGLEPSEEEAPRSPLAP---SEG---AGSDVFDGDLGMGAAKGLQSL
                                                                                                                                                                                        GPPQQEGNNPQ
                                                                                                                                                                                                                                      GPPPPPGKP-----
                                                                                                                                                                                                                                                                                                                                                                                KSRSPRSPPGK-PQGPPPQGGNQPQGPPPPPGKPQGPPPQGGNKPQGPPPPGKPQG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MSLDNPDYQQDFFPKETKPNGIFKG-PTAENAEYLRVAPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --APGRDLHYQN--PHSNAVGNPEYLNTAQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TLSPGKNGVVKDVFAFGGAVENPEYL-TPQGGAAPQPHPPPAFSPAFDNLYYWDQ-----
                                                                                                                                                                                                                                                           PHPPPAFSPAFDNLYYWDQDPPERG-----
                                                                                                                                                                                                                                                                                  NRPQGPPPPGKPQGPPPQGDKSQSPQSPPGK-----
                                                                                                                                                                                                                                                                                                                                 ----PPPQGDKSQSPRSP-PGKPQG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----DP-----
                                                                                                                                                                                                                                                                                                                                                       PTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPS----PR---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S62928; AAB27288.2; -.
ER 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                             64; Conservative
                                                                                                                                                                                                                                                                                                          EGPLPAARPAGATLERAKTLS----PGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQ 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            297 AA;
                                                                                                       (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel.
                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                       Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Fragment)
                                                                                                                                                                                        259
                                                                                                                                                                                                              210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=8317492;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PERGAPPSTFKGTPTAENPEYLGLDVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29046 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                        11.5%;
                                                                                                                                                                                                                                     -QGPPPQGGNKPQGPPPGKPQGPPAQGGSKSQSARAPPGKPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01,
19,
                                                                              01,
21,
                                                                              Created)
Last sequential Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 135.5; DB
Pred. No. 0.0096;
7; Mismatches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1C7BFE4CA6B5B5F0 CRC64;
                                                                               sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                  -----PPPQGGNQPQGPPPPPGKPQGPPQQGG
                                                                                                                               379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               297
                                              Vertebrata; Euteleostomi;
                                                                                                                               ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₹
                                                                                                                                                                                                                                                                                     -----PQGPPPQGGNQPQ
                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PTCLSSGFNSPALWIQKGSHQ
                                                                                                                                                                                                                                                                                                                                                                                                                              76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                  4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              217
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostom1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      297;
                                                                                                                                                                                                                                                             -ALASTEK 201
                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                      248
                                                                                                                                                                                                                                                                                     197
                                                                                                                                                                                                                                                                                                                                  153
                                                                                                                                                                                                                                                                                                                                                         116
                                                                                                                                                                                                                                                                                                                                                                                 106
                                                                                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>~:</u>
                                                                                                                                                                                                                                                                                                                                                                                                                              13;
```

```
Q18751
Q18751
ID Q1875
AC Q1875
DT Q1-NC
DT Q1-NC
DT Q1-NC
DT Q1-NC
DT Q1-NC
OC Caeno
OC Eukar
OC Rhabad
OX NCBI_
RN [1]
RP SEQUE
RA W1150
RA Gardn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SO DR DR RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                           Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.,
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fulton L.,
Gardner A., Green P., Hawkins T., Hillier L., Jier M., Johnston L.,
Jones M., Kershaw J., Kirsten J., Laister N., Latreille P.,
Lightning J., Lloyd C., McMurray A., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen R.,
Smaldon N., Smith A., Sonnhammer E., Staden R., Sulston J.,
Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Waterston R.,
Watson A., Weinstock L., Wilkinson-Sproat J., Wohldman P.;
"2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
elegans."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nishimatsu S.I., Satoshi, Oda, Naoto, Ueno;
Submitted (AUG-1992) to the EMBL/GenBank/DDBJ databases.
EMBL; X68249; CAA46321.1;
InterPro; IPR003124; WH2.
Pfam; PF02205; WH2; 1.
PRINTS; PR01574; TUBBYPROTEIN.
SMART; SM00246; WH2; 1.
SEQUENCE 379 AA; 38859 MW; 84DC0FB24F971AAD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q18751;
01-NOV-1996 (TrEMBLrel. 01,
01-NOV-1996 (TrEMBLrel. 01,
01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q18751
                                                                                                                                                                               SEQUENCE FROM N.A.
Johnson, D, Stellyes L.;
"The sequence of C. elegans
Submitted (DEC-1995) to the
Submitted (NOV-1995) to the EMBL/GenBank/DDBJ databases EMBL; U41557; AAA83301.1; -. SEQUENCE 309 AA; 31085 MW; 6171574A991696D7 CRC64;
                                                                                       Waterston R.;
                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=94150718; PubMed=7906398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Rhabditidae; Pelode NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C50F7.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C50F7.5 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. TISSUE-OOCYTE;
                                                                                                                                                                                                                                                                                                                                     Nature 368:32-38(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134 SGGRPHDDSDSGSNRSSPPEVGRAHRPSLPDLSRPPSSTSSGMKHSSSAPPPPPPGRRQA 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        167 APOPHPPPAFSPAFDNLYYWDODPPERGAPP 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RP---PPPA------RDPPGRGAAP 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RQPPTSLNGPPSPINEPAPELPQRHNSLHRKTAGPVR-----GLAPPPPQSVHLSP-GGN 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----REGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPE--YLTPQGGA 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -GAPPAPSQNAKPYNR--EKPLPPTPGHRAPAAPPVKPPPSPINSRSPSAHSQPPPPPPY 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KGLQSLPTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNQPDVRPQPPSP--- 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              h 11.4%; Score 134.5;
Similarity 28.0%; Pred. No. 0.01
59; Conservative 16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   etazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                               cosmid C50F7.";
EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      рв 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          379;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
```

·...

·. ·

```
밁
                            δõ
                                                           밁
                                                                                      ş
                                                                                                                      Db
                                                                                                                                                   Š
                                                                                                                                                                                     밁
                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                Best Local
 163
                                                             117
                                                                                         120
                                                                                                                        66
                                                                                                                                                     67
                                                                                                                                                                                   31
                                                                                                                                                                                                                7 HHRHRSSSTRSGGGDLTLGLEPSEEEAPRSPLAPSEGAGSDVFDGDLGMGAAKGLQSLPT 66
                                                                                                                                                                                   HHHHKTKAPRTSRGIATTTFAPTSSDL---PIAGSSSA-----
                                                                                         LPAARPAGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYLTPQGGAAPQP-----HPPP 174
 SVEPSED
                                                                                                                                                   HDPSPLQRYSEDP-----TVPLPSE--TDGYVAPLTCSPQPEYVNQPDVRPQPPSPREGP 119
                              AFSPAFDNLYYWDQDPPERGAPPSTFKGTPTAENPEYLGLDVP 217
                                                           QPSGPPSPGPVDPSEDPQP------SVEPSEDHQPSGPPSPGPVDPSEDPQP 162
                                                                                                                        ----PVIASSADPILPTSVVPQPSNEPSPGTVAP---SDEPSPSGPPS--PGPVNPSEDP 116
                                                                                                                                                                                                                                               54;
                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                               11.3%; Score 134; DB 5 24.2%; Pred. No. 0.013;
PQPSGPPSPGPVDP-SEDPQPSGSSSP 195
                                                                                                                                                                                                                                                25;
                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                             DB 5; Length 309
                                                                                                                                                                                                                                                74;
                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                70;
                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                   65
                                                                                                                                                                                                                                                :10;
```

9

Search completed: April 28, 2003, 13:41:41 Job time :  $20.515 \ \text{secs}$ 

THIS PAGE OLAMA (USPRO)